City of Toronto Hot Drink Cup Strategy

Research on Behaviour Change

Draft Report

Submitted to

City of Toronto

Kelleher Environmental

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Executive Summary

In December, 2008, City Council and the Public Works and Infrastructure Committee (PWI) requested that the General Manager, Solid Waste Management Services, meet with hot drink retailers in order to seek a resolution that meets the waste reduction and recycling goals for hot drink cups. A Hot Drink Cup Taskforce which included hot drink retailers/brand owners, material suppliers, material converters, distributors/wholesalers, and trade organizations was formed in January, 2009.

Subcommittees were established to work on different issues "off-line" from the main Hot Drink Cup Taskforce and to report back to the Taskforce on findings. Separate sub-committees addressed the following issues:

- Behaviour Change and Education;
- Processing;
- Market Assessment;
- Economic Impact Assessment, and
- Food Safety.

Kelleher Environmental was contracted by City staff to provide research support to City staff in development of the report to Council and to research and prepare a report on behaviour change and education. Entec Consulting Ltd prepared a report addressing processing issues and AMEC Americas Ltd carried out an end markets assessment for poly coated paper products. Focus groups were carried out by Ipsos Reid in March, 2009.

Incentives to Increase The Use of Refillable Hot Drink Cups and Recommendations on Next Steps

The City of Toronto strongly supports a waste management hierarchy which starts with source reduction, then reuse, prior to recycling. Source reduction can be accomplished by increasing the use of refillable mugs and thereby reduce the use of disposable cups. A multi-part program is suggested to explore and measure a number of approaches to source reduction of hot drink cups. Voluntary targets of selling 15% to 25% of hot drinks in refillable cups should be set as goals of the research. These targets have been reached in other programs.

Use Ceramic Mugs For In-Store Consumption

Encouraging or requiring the use of ceramic mugs for in-store hot drink consumption will reduce the use of disposable hot drink cups. It should be offered by all coffee/hot drink vendors above a certain size in the City.

Measure the Current Uptake of Refillable Mugs With The Existing 10 Cent Price Reduction (No Additional Education)

There is already a 10 cent price reduction in place at most large coffee chains operating throughout City of Toronto when people use a refillable mug. However, data are not publicly available on the rate of uptake of this option. Starbucks reports the uptake rate for refillable mug use at about 1.2% throughout the North American market. Various programs profiled in this research have been successful at increasing this percentage to values of 15% and higher through the use of various financial incentives to consumers and social marketing campaigns.

The current refillable mug uptake rate needs to be measured and reported to the City of Toronto through a voluntary city/industry partnership process.

Increase Promotion of Existing 10 Cent Economic Incentive (Discount) for Refillable Mugs and Measure Impact

Research for this study, and results of the March, 2009 Ipsos Reid focus groups indicates that people are not aware that a 10 cent price discount is available in many coffee shops for those who use refillable mugs.

The baseline refillable mug use rate has been measured at 15% of sales in some locations, and has increased to 25% of sales through intensive and sustained promotion, education and social marketing campaigns.

The maximum uptake which can be achieved by the existing 10 cent discount should be tested in the City of Toronto through pilot tests which heavily promote the 10 cent discount, and stress the environmental benefits of reusable vs disposable hot drink cups. This option should be promoted extensively along with significant amounts of cup give-aways and prizes/contests. The maximum participation which is practically achievable at this discount level can then be measured.

The pilot should include the option to donate the discount to local charities and measure the impact this incentive makes.

Measure Impacts of Higher Economic Incentives (Discounts) on Refillable Mug Uptake

When the current baseline use of refillable mugs is known, various incentives should be tested to identify the financial discount at which widespread use of refillable mugs reaches its practical limit There will always be cases where people will want to use a take-away hot drink cup.

A number of barriers to the increased use of refillable hot drink containers (Commuter mugs, lug-a-mug, etc.) were identified through research from other programs and were confirmed through the March, 2009 Ipsos Reid focus group research. These include:

- The inconvenience of carrying mugs around – they are big and bulky. If smaller mug size options were available, consumers might be more likely to use them;
- Forgetting the mug;
- The mug gets dirty and is hard to clean;
- Coffee tastes different in a refillable mug.

City of Toronto staff recommended a mandatory 20 cent discount on reusable mugs in the December, 2008 report to Council.

A number of short term pilot projects have measured the impacts of different economic incentives on reusable mug uptake. Refillable mug use increased from 3% to 8% in one US study when the cost of the cup, sleeve and lid (17 cents) were shown separately. Research by Starbucks indicated that when the 10 cent discount was donated to charity rather than returned to the customer, uptake of refillable mugs increased dramatically; this was referred to as the “Feel Good” effect. Starbucks research also indicated that even though consumers indicated when surveyed that they would use the refillable mug more if the economic incentive was higher, in practice the uptake did not increase when the incentive was increased. Therefore, field testing is clearly required to measure the actual impacts of different economic incentives.

There is not sufficient data available with which to predict the reduction in disposable cup use which would be achieved by different economic incentive discount amounts. The impacts of higher discounts (20 cents and 25 cents) should therefore be pilot tested in different markets throughout the City of Toronto.

Ideally pilot tests should be carried out throughout the City to cover different demographics and market segments. City of Toronto should run the pilot tests at facilities under their own control and partner with private sector coffee shop operators to test the incentives in a number of private sector coffee shops.

Additional statistical research would be required to design the pilot test in detail. However 30 public sector and 30 private sector coffee shop sites would be a good starting point for consideration.

Recycling of Hot Drink Cups

Research carried out by Entec Consulting Ltd and AMEC Americas Ltd as part of the Hot Drink Cups Taskforce mandate identified the fact that the current polycoat hot drink cups can not be recycled in the City of Toronto recycling system at this time for two reasons:

- Optical sorting equipment at existing MRFs in the City can not separate the hot drink cups;
- Visual observations indicated that 90% of hot drink cups and lids in the current SSRM (source separated recyclable material) stream flow to the small container sorting line in Toronto MRFs. There is not sufficient space at existing Toronto MRFs to accommodate the projected number of sorters and equipment considered necessary to manually recover hot drink cups and lids as a designated SSRM for separate marketing.

Research carried out by AMEC Americas Ltd concluded that:

- Adding another grade of fibre to the blue box program could have detrimental effects on the existing recovered fibre end markets;
- Pre-consumer poly coated cup end-users do not necessarily have the capability to effectively make use of or interest in using post consumer poly coated paper products;
- Combining post consumer poly-coated paper cups with other grades of recovered fibre or poly-coated materials does not improve the marketability of post-consumer poly-coated paper cups;
- Post- consumer poly-coated paper cups need to be kept separate from other grades of recyclables in order to be effectively marketed;
- Mill trials are a necessary next step in defining the end market; a local mill was interested in potentially partnering with City of Toronto on the mill trial.

Given the weak economy, paper markets have seen a dramatic drop in fibre demand and are therefore becoming much more demanding about the quality of material they will accept. Polycoat cups are considered a contaminant in most paper fibre streams sent for recycling. Adding a material such as polycoat cups to the recycling system should only be done when the technology is available to separate it effectively at the MRF, and when end markets have fully developed technologies which can effectively process the material. One local fibre end market is interested in working with the City on solutions to processing the collected polycoat if it is fully separated from other materials.

At the outset of the project, it was considered possible that it would be necessary to educate Toronto consumers to remove the lid from the cup prior to recycling. As the study progressed it became clear that in most cases, lids became separated from cups through compaction and other processes during collection and processing. The end markets interviewed also needed kraft sleeves removed from cups, so education on removing the kraft sleeve was an additional requirement for the education program. Given that recycling of hot drink cups currently faces a

number of short term obstacles, there are no immediate needs to educate Toronto citizens on behaviour change related to the recycling of hot drink cups.

Therefore in the short term, behaviour change efforts should focus on increasing the use of refillable cups. Conclusions on recycling coffee/hot drink cups in City of Toronto, whenever processing and market related issues are addressed are listed below:

- Recycling of coffee/hot drink cups is complicated by the fact that these containers are used "away from home" and on the run.
- The City needs to ensure that comprehensive recycling options are available on the street, in public spaces and in work places as well as other locations (e.g. the MUSH sector) where people typically consume hot drinks in take-away containers;
- Barriers to recycling take-away cups in general include the fact that these containers still contain some liquid when discarded – this would discourage people from removing the lid, should this be necessary;
- Initial market research for this project indicated that the sleeve would also need to be removed from the cup before recycling – this is an additional inconvenience when people are "on the run" which may limit recycling behaviour;
- People learn incrementally - it will take time to change behaviour and have Toronto citizens and commuters to Toronto recycle coffee/hot drink cups and take lids and/or sleeves off before recycling;
- When the City embarks on a coffee cup recycling program, it should consider a number of social marketing techniques to encourage hot drink cup recycling.

The City Should Lead By Example

City staff should work with their food service vendors on all City properties to ensure that a refillable option is available for hot drinks.

The City should use food service facilities on its own properties to test the efficacy of different financial incentives (10 cents, 20 cents and 25 cents) to increase the uptake of refillable cups for hot drinks.

The City should work with large coffee/hot drink chains in the City to set up pilot programs to test the efficacy of different refillable incentives to increase the use of refillable hot drink cups.

1. Introduction

At the December 1st-2nd, 2008 City of Toronto Council Meeting, Toronto City Council considered the In Store Packaging Report, which looked at plastic bags, take-out food containers, plastic water bottles, toxic waste (batteries), and hot drink cups. In particular, it looked at how to source reduce these items and make them compatible with the City's recycling system. Staff and council reports related to the decisions are presented in Appendix A and Appendix B to this document.

Staff recommended that starting June 1, 2009, all hot drink retailers must provide a 20¢ discount to a customer that uses a reusable or refillable cup, to offset the use of paper or plastic cups. They also recommended that such a change be supported by signage and noted on the cash register receipt. Staff recommended that any cup not compatible with the City of Toronto's recycling system by December 31, 2009, would be banned. Specific wording from the October 29th, 2008 staff report (full text in Appendix A) is as follows:

> **Hot Drink Cups**
> 2. Commencing June 1, 2009, the City of Toronto:
>
> > a. require all retailers who sell hot drinks in a single-use disposable Hot Drink Cup (as defined in Appendix B) to offer, and provide, a minimum discount of $0.20 off of the price of a hot-drink in a single-use disposable Hot Drink Cup, to every customer that purchases a hot-drink in a reusable or refillable cup (as defined in Appendix B);
> > b. require all retailers who sell hot beverages in single-use disposable cups to communicate the discount to consumers by:
> > i. prominent signage at the point of purchase; and/or
> > ii. itemizing the discount on the transaction receipt (if one is issued); and
> > c. require retailers who sell hot drinks in single-use disposable cups to sell the hot drink in an equivalent quantity by filling a reusable mug in lieu of single-use disposable cups.
>
> 3. The City of Toronto ban the sale or distribution of single-use hot drink cups (as defined in Appendix B) that are not compatible with the City of Toronto blue bin program (as described in Appendix B), by December 31, 2009.

Recommendations for hot drink cups were referred back to Staff and the Hot Drink Cup Taskforce for further consideration. City Council requested that the General Manager, Solid Waste Management Services, meet with hot drink retailers in order to seek a resolution that meets the waste reduction and recycling goals for hot drink cups and to report back to the Public Works and Infrastructure Committee in April, 2009. The timeline was extended to June, 2009 to allow more time for research on the topic.

Staff met with a smaller group of stakeholders in December, 2008 and asked them to convene a larger group of stakeholders, including hot drink retailers/brand owners, material suppliers, material converters, distributors/wholesalers, and trade organizations. As a result, a Hot Drink Cup Taskforce was formed in January 2009. Subcommittees were established to work on different issues "off-line" from the main Hot Drinks Committee and report back to the main committee on findings. Separate sub-committees addressed the following issues:

- Behaviour Change;
- Processing
- Market Assessment
- Economic Impact Assessment, and
- Food Safety

If the group were able to reach a consensus on how to proceed, that would strengthen staff's revised recommendations to Council.

Kelleher Environmental was contracted by City staff to provide research support to City staff in development of the report to Council and to research and prepare a report on behaviour change. Entec Consulting Ltd prepared a report addressing processing issues and AMEC carried out an end markets assessment for poly coated paper products. Information from other consultant's reports is incorporated into this document where appropriate.

2. Industry Profile

Toronto's $5.8 billion restaurant and foodservices industry generates 1.8% of the total business revenue and is one of the city's largest private sector employers. The foodservice industry directly employs 84,800 people in Toronto representing 6.2% of the city's total employment. It is a major source of entry-level and part-time jobs in the City.

Restaurants in Toronto currently pay over $40 million in property taxes to the City of Toronto. Pre-tax profit margins in Ontario are the lowest in the country, at 2.9%. Restaurant sales are expected to fall more than 6% in 2009 with the current economic decline[1]. Key statistics from the hot drink service industry in Toronto (a sub-set of the complete food service industry) are presented in Table 1 below.

Table 1: Establishments, Employment and Revenues for Hot Drink Service Industry in Toronto[2]

Category	Number of Establishments	Employment	Revenues
Full Service	3,106	34,695	$2.2 billion
Limited Service	4,032	38,739	$2.6 billion

The market share of different companies in the Canadian coffee sale market is presented in Table 2. It shows that in 2005, Tim Horton's had the lion's share of the market at 70%.

Table 2: Coffee Retail Sales Share of Different Chains[3]

Rank	Chain	Share 2005	Share 2000
1	**Tim Hortons**	70.0%	67.7%
2	**Coffee Time Donuts**	5.3%	5.2%
3	**Starbucks**	5.2%	4.7%
4	**Country Style**	5.0%	4.3%
5	**Second Cup**	4.0%	5.7%
6	**Dunkin Donuts**	3.0%	4.3%
7	**Robins Donuts & Donut Delite Café**	2.5%	3.0%
8	**Timothys**	1.5%	1.8%
9	**Bakers Dozen**	1.2%	1.6%
10	**Mmmuffins (purchased by Timothy's Jan 2002)**	1.2%	1.6%
11	**All Others**	1.1%	

It was estimated in a separate report by Entec Consulting Ltd that about 1 million coffee/hot drink cups per day are used in City of Toronto. The sources and disposition of the coffee cups are presented in the Table 3 below (developed by Entec Consulting Ltd).

[1] 19th March, 2009 email to City staff from Stephanie Jones, Vice President, Ontario, Canadian Restaurant and Foodservice Association

[2] 26th February, 2009 email to Vincent Sferrazza, City of Toronto, from Stephanie Jones, Vice President, Ontario, Canadian Restaurant and Foodservice Association

[3] Keith J. Tuckwell. Canadian marketing in action, 7th ed (Pearson Education Canada). Canadian marketing cases: Country Style Food Services Inc – Figure 1, page 357

Table 3: Sources and Disposition of Coffee and Hot Drink Cups in City of Toronto[4]

	Amount	Assumptions
Generation of cups and lids	1 million per day	
Trips out of City	152,858	
Trips into City	336,883	
Net daily City of Toronto generation of cups and lids	1,184,025	
Annual generation	357.6 million	250 weekdays @ 100% 296 million 104 weekend days @50% = 61.6 million
Annual Weight Generated	4,291 tonnes/year cups	357.6 million * 12 grams per cup 357.6 million lids @ 2 grams per lid
Assumed Cup Distribution for Collection		
Retail Outlets and Private Collection	20%	
Street bins	45%	
Households	10%	
Garbage	25%	

[4] Entec Consulting Ltd. Report on Hot Drink Cups; prepared for City of Toronto. Draft March, 2009

3. Hot Drink Cup Behaviour Change Considerations

Various approaches and methods can be used to bring about consumer behaviour change. These include:

- **Voluntary** methods such as promotion and education, awareness raising, social marketing, etc.
- **Mandatory or penalty** methods such as bans, regulations, fines, bag limits, etc
- **Economic and Other Incentives** which use pricing signals and other non-monetary methods to encourage behaviour change.

The method used, to some extent, depends on the type and complexity of the required behaviour change.

At the outset of this study, it was not known which behaviour change would be required of City of Toronto residents and those who commute to the City in order to resolve the challenges of recycling hot drink cups. Source reduction and reuse behaviour change involves reducing hot drink consumption in disposable cups and moving the behaviour to the use of refillable cups and mugs.

Recycling behaviour will depend on the future recycling system chosen.

3.1 Source Reduction and Reuse Behaviour Change Requirements

City of Toronto encourages source reduction and reuse ahead of recycling. Hot drinks are currently sold mostly in take-away polycoat cups with polystyrene lids. Smaller operations sell take-out hot drinks in EPS cups with polystyrene lids. The production of this waste stream could be reduced if reusable mugs and cups were used. The behaviour change required to source reduce polycoat cup production therefore includes:

1. Increasing the use of travel mugs to source reduce coffee/hot drink cup generation, and
2. Increasing the use of ceramic mugs for in-store sales (by requesting a ceramic rather than a disposable cup, and always having the option to purchase an in-store drink in a ceramic mug).

3.2 Recycling Behaviour Change Requirements

Based on the research carried out by Entec Consulting Ltd and AMEC America Ltd on processing considerations and end markets for coffee/hot drink cups with or without lids and sleeves, the following behaviour change could be required of coffee/hot drink cup users in Toronto in the future when the processing and end market considerations are resolved and the recycling program is launched:

1. Remove lid from the hot drink/coffee cup – put the lid in the recycling bin and the cup in the recycling bin;

2. Remove the insulating sleeve from the hit drink cup before putting the hot drink cup in the recycling bin (the insulating sleeve could be put in a green bin, recycling bin or garbage bin);
3. Remove the lid from the hot drink/coffee cup – put the lid in the recycling bin and the cup in the Green Bin (least favoured because of the higher cost of Green Bin processing, and also because Green Bins are not generally available in Toronto public spaces where the hot drink cups would be discarded), or
4. Remove the lid from the coffee/hot drink cup – put the lid in the garbage and put the cup in the recycling bin.

Recycling behaviour change could be required at various locations (rather than strictly in the home, which is the case for Blue Box recycling):

- At workplaces where the coffee/hot drinks are consumed;
- On the street where the empty coffee/hot drink cup is generated;
- At home where the coffee/hot drink cup is brought home in the car.

A significant part of the behaviour change is therefore "away from home recycling" which is quite different to "at home" recycling for a number of reasons:

- Consumers act differently when they are away from home. They have become habituated to recycling at home but may not react this way in other settings;
- "Away from home" recycling is usually more challenging than at home recycling as the same peer pressure is not present (e.g. people would never litter in their own home but litter when away from home);
- Neighbourhood pressure can encourage positive behaviour at home (e.g. *Good Neighbours Recycle* is a Toronto slogan; the Blue Box and the Green Bin are very visible evidence that households are taking part in waste diversion programs);
- Consumers with take away hot drink containers are often rushing, juggling various articles (briefcases, packs, shopping bags, purses) with one hand holding the cup, therefore stopping to take the lid or sleeve off before putting the hot drink cup in the recycling bin is inconvenient and a physical challenge;
- Consumers bring hot drink cups to the office/work location, to school to the store (while shopping) or home;
- Removing the lid or sleeve can be an extra challenge to recycling, for some consumers;
- Hot drink cups are sometimes discarded with some cold coffee or liquid in the bottom, or the contents only partially consumed. Removing the lid (if required) risks spillage of the cold coffee on the user or the bin contents.

Some of these issues were raised as barriers to recycling in focus groups held on 5th March, 2009 with City of Toronto residents. Results are presented in a separate report[5].

3.3 Designing the Hot Drink Cup Recycling Promotion and Education Campaign

When the City of Toronto has decided on the route forward, considerable additional research would be needed. It will include to testing different messages themes and approaches aimed at encouraging the required behaviour change. In order to design an effective public education program and communication messages, the following questions will need to be answered:

[5] Ipsos Reid – Disposable/Single Use/Reusable Cups – Qualitative Research – Draft Report to City of Toronto March, 2009

- Who is the primary target audience, i.e. heavy and medium frequency buyers of take away coffee/hot drinks?
- Estimate the share of the market that these segments represent;
- What are the key demographic characteristics of coffee/hot drink consumers?
- What are the opportunities and the barriers to reaching that audience?
- How receptive will they be to adopting the new behaviour?
- Is the new behaviour, and therefore the behaviour change required clear and practical?
- What is the environment in which the behaviour will likely occur (e.g on the run, on the street, at the office/school, etc)?
- What are the specifics that they are being asked to do (e.g take lid or sleeve off cup and put one into the recycling bin or green bin and the other into a garbage can, etc.)?
- How much is the new behaviour a change from their current behaviour?
- Is the behaviour change required seen as major or minor?
- Is the behaviour seen to be easy to accomplish or hard/inconvenient (e.g struggling with shopping bags and trying to recycle a coffee/hot drink cup with cold coffee in it)?
- Is the behaviour change time consuming or in any other way problematic (removing the sleeve and the lid before recycling the cup)?
- What are the consequences of not changing behaviour ?
- Will there be peer pressure for or against the behaviour change?

Communication research would be required to test initial themes or concepts and pre-test message prototypes with possible refinement after the initial market tests. a lead time of pproximately four to five months would be required to develop the communication strategy, messages and production phase[6] prior to the program launch.

Three focus groups were held by Ipsos Reid to probe consumer reactions to various aspects of the hot drink cup issue on March 5th, 2009. The results are presented in a separate Ipsos Reid report and relevant references to this work have been incorporated in this report.

The following sections describe available quantitative information on different methods which are used to bring about behaviour change, and the extent to which the results could be applied to the City of Toronto hot drink cup issue.

[6] Personal communication Barb McConnell, McConnell-Weaver and Helene St Jacques, Informa Research, February, 2009

4. Existing Diversion Programs for Coffee Cups

A number of Ontario waste diversion programs (recycling and composting) target hot drink cups and lids, including Hamilton, Essex Windsor, York Region, and Owen Sound. As part of the research carried out by Entec Consulting Ltd and AMEC Americas Ltd, programs which already recycle coffee/hot drink cups were contacted to ask end market and processing related questions. The market interviews indicated that hot drink cups are typically delivered to mills as hardpack or as part of the boxboard stream and the polycoat material is typically part of mill residue because of the long dwell times required to break down the material[7]. Polycoat hot drink cups are categorized as an "out-throw" which means that while a small amount is tolerated in the bale sent to the mill, the material generally ends up in the processing residue stream[8].

Kelleher Environmental contacted the existing program operators to address communication and education issues, ask about the behaviour change required and whether any monitoring had been carried out to measure program impacts.

4.1 Hot Drink Cups in Green Bin Programs

Hamilton, Durham Region, Halton Region and Ottawa Valley all collect hot drinks cups as part of their green bin organics program. The Region of York encourage residents to put hot drink cups in the recycling bin if clean. If they are dirty, the can be put in the Green Bin. Details are presented in Table 4.

Table 4 : Ontario Green Bin Programs That Accept Paper Cups and Directions Provided To Residents

	Paper cups accepted in GREEN bins	Paper cups accepted in BLUE boxes	Directions for Plastic lid	Exceptions
Durham	yes	No	No plastic of any kind in green bin. Blue box accepts plastic lids but gives examples as yogurt, cottage cheese container and lids.	
York	Yes if soiled	Yes if NOT soiled	Remove lids	No WAXED cups in Blue box
Hamilton	yes	No	Coffee cup lids go in the BLUE box	No plastic in green bin
Niagara	yes		Discard lids	
Ottawa Valley	yes	No Plastic coffee cup lids go in container recycling box which is their YELLOW box		

Each of these programs was contacted to ask if residents were required to separate the lid from the hot drink cup, what residents were specifically requested to do in promotion and education

[7] AMEC Americas Ltd *Poly-coated Paper Products End Markets Assessment*, Report to City of Toronto, March, 2009
[8] Ibid

material, and the level of success experienced to get residents to adopt the desired behaviour change. Selected comments are summarized below.

City of Hamilton

The City of Hamilton communicates information regarding the handling of hot drink cups and other diverted materials in two main formats:

- Their annual waste collection calendar, and
- In person when talking to residents.

City of Hamilton have not carried out any market research on the hot drink cup issue. They have not, at this point, run a campaign specific to the message regarding hot drink cups, and therefore do not have any data on the effectiveness of this component of their diversion program.

The waste composition data collected by the City is in draft format so they could not provide exact numbers, but staff commented that the capture of paper cups (all kinds - not just coffee) is low in the green cart and the capture of polystyrene (all kinds - including coffee cup lids) is low in the blue box.

Ottawa Valley Waste Recovery Centre (OVWRC)

Waste from five communities (Pembroke and four others) is processed at the Ottawa Valley Waste Recovery Centre (OVWRC). The program accept coffee cups in the organics program. At the time of the program start up, 7 years ago, the paper mill (Abitibi) was consulted and reported that they would not accept hot drink cups in the fibre (paper) stream. A decision was therefore made to include hot drink cps in the SSO (source separated organics) stream. Ottawa Valley processes SSO using an in-vessel system with a 2 week retention time after pre-sorting and blending. The lids do not appear to be a major source of contamination in the organics stream. Ottawa Valley staff report that they see very few lids in the organics stream. They ask residents to remove the lids and put them in their yellow bin container recycling and recover some lids in the recycling stream.

4.2 Hot Drink Cups in Blue Box Recycling Programs

Essex Windsor, York Region, Owen Sound, Kawartha Lakes and others all include hot drink cups as designated recyclables in their Blue Box programs.

Essex Windsor Solid Waste Authority

Essex Windsor Solid Waste Authority (EWSWA) collect curbside recyclables in two streams: containers in a blue box and fibre (papers) in a red box. Hot drink cups are requested (without lids) in the red box. The cups are not separated during processing. The majority end up in the mixed paper product and are designated as an “out-throw” in that product. To date, markets for the mixed paper have not had an issue with contamination levels.

EWSWA has been promoting the recycling of Tim Horton cups (in fact all hot and cold beverage paper cups) for 4 years and directs residents to remove the lid and put the cup in their Red Box to be recycled with the rest of their fibre materials. The authority considers the coffee cup to be no different than a cereal box. Staff consider that it is not usual, for example, for the resident to leave the waxed paper bag that contained the cereal inside the cereal box when they set it out for recycling. They don't pull the bag out of the cereal box when it goes through the

recycling centre, so they consider it unnecessary to worry about the thin wax or plastic liner on a coffee cup[9].

EWSWA staff comment that the markets have accepted the cups in both their hardpack mix and their OBB (old boxboard) mix. Visually, they are not a dominant part of the bale. Staff report that they get a lot of cups, but they don't know what the recovery rate is as they have never counted them, or obtained data on sales from the local franchise owners in order to measure a recovery rate.

They have a very high level of compliance regarding the removal of lids. Staff report that if you tour the recycling centre you often see 20 or more cups stacked inside each other with no lids, and other loose cups with no lids. They do find loose lids in the residual, likely meaning that it was left on the cup but got squeezed off during the collection, compaction or in-feed processes.

York Region

York Region has a single stream curbside collection program that accepts hot drink cups (without lids) if they are clean. If they are "soiled",residents are requested to put them in the Green Bin for composting. The cups are not separated during processing at the MRF (material recycling facility). Staff believe that the majority of the cups end up in the mixed paper product. The cups are designated as an "out-throw" in that product. To date, markets for the mixed paper have not reported having an issue with contamination levels.

City of Owen Sound

The City of Owen Sound (6,200 households) has a 3-stream curbside blue box collection program consisting of:

- containers in a blue box
- paper, magazines, directories, etc. contained in a paper or plastic bag
- cups, boxboard, juice cartons, egg cartons, etc. contained in a paper bag or cardboard box (i.e. a "hard-pack" mix).

The "hard-pack" mix is bulked at the Miller Waste Material Recycling/Recovery Facility (MRF) in Owen sound without sorting and is marketed to Canada Fibres. It is not clear whether further sorting is carried out on this mix or whether or not the cups are considered a contaminant by the final market.

City staff indicated that they collect coffee cups in their boxboard stream and the lids go in the polystyrene/styrofoam stream. Some lids end up in the boxboard stream but the contractor (Miller Waste) has not reported that it is an issue. They also take other coated boxboard such as milk cartons and frozen food boxes as well as polycoat/tetrapak.

The City of Owen Sound has not mounted a special advertising campaign focused on hot drink cups, but reported that Tim Hortons had installed some attractive sorting containers at their stores in Owen Sound, including at the drive-through. The City does not have any separate data on coffee cups, just the overall boxboard tonnage.

[9] Personal communication, Todd Pepper, General Manager, EWSWA, February, 2009

City of Kawartha Lakes

The City of Kawartha Lakes collects hot drink cups in the paper stream. The instructions are:

> **The Green Paper Box** includes all papers. No sorting, bagging or bundling is necessary (except for cardboard). Papers include frozen food boxes, milk cartons, paper ice cream cartons, toilet paper/paper towel rolls, paper coffee cups, greeting cards, gift wrap, and soft cover and hard cover books.

5. Promotion and Education Programs and Impacts

Ontario householders have demonstrated that they want to reduce the volume of waste that they generate by participating in Blue Box recycling and Green Bin organics programs. This point is particularly true for curbside recyclers, who basically have control over their in-home recycling program and have access to convenient collection. Recycling programs have evolved gradually over time adding new materials and new preparation instructions – the learning has been incremental. People have come to perceive recycling as a 'continuous improvement' process, demonstrating that they are willing to keep adding new items/materials to the list of things that can be recycled. This now includes, depending on the jurisdiction, organic collection and province-wide access to convenient municipal and retail location drop-off for some MHSW (municipal hazardous and special waste) and selected electronics products through recently launched MHSW and WEEE (waste electrical and electronic equipment) stewardship programs.

Recycling was introduced at an opportune moment; clearly its time had come. Studies have revealed that momentum had built concerning modern society's wasteful behaviour. As awareness spread about the difficulties of siting new landfills and the sheer volume of waste that people were creating, receptivity to the recycling solution followed. Recycling provides people with a morally positive antidote to material consumption. It provides a type of redemption and has become Canada's leading 'equal opportunity' environmental program. Recycling has become normative and expected behaviour in the context of 95% of Ontario households. In fact, it has become so entrenched that people expect recycling to be available everywhere – at work, at leisure, in shopping malls, public space/parks and recreational facilities.

All this has been accomplished using a variety of formal education tools, such as annual distribution of lists of what can and cannot be recycled, periodic print ads in local newspapers, billboards and broadcast (radio and television) and municipal recycling Hotlines and websites. In-school education programs teach children about diversion; they in turn bring this information home and train the rest of the family. Informal education also has reinforced the wisdom of recycling – messages about it appear in newspaper stories, cartoon strips and editorials, magazine articles, radio and television programs and on the internet.

5.1 Social Marketing and Public Education

Many social marketing and public education tools can work together to bring about massive behaviour change. Many examples exist (drunk driving; wearing seat-belts; wearing sun screen; saving for retirement, exercise, healthy eating, etc).

Over time, public education coupled with social marketing campaigns can change individual behaviour and community attitudes and practices. The key feature of behaviour change is that works over time through incremental learning and the slow adoption of new behaviours.

-

One of the success factors in changing behaviour is that the required change has to have buy-in from a core group. The momentum will then spread across much of the population over time.

For successful adoption, the required behaviour change needs to be focused, and easy to understand. It also has to make sense to those who are being asked to do it (e.g. using refillable hot drink cups will reduce waste to landfill, etc.)

Compliance with the behaviour change must be reinforced by social rand/or personal rewards and/or regulations. In many communities, high recycling rates result in reduced costs for garbage

in full pay as you throw systems, for example. In Ireland use of a reusable shopping bag at grocery stores saved the high cost of a plastic bag, which includes a 22 Euro cent levy (33 cents Canadian). Use of disposable bags was reduced by 94% as a result.

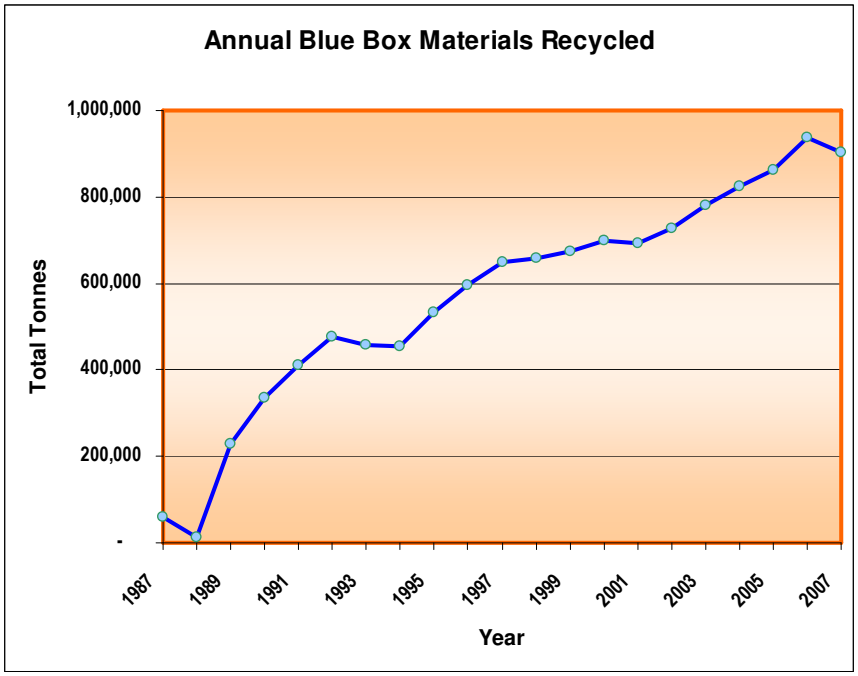
In the past, embedding behaviour change in the general population could be slow, but social media and other factors have hastened the rate of change in recent years.

5.2 Ontario's Blue Box Program

Ontario's Blue Box program was implemented throughout most of Ontario in the late 1980's with industry and government support. At the time, awareness of the environment was at an all time high among the general public (levels similar to those measured in 2007). The Blue Box program provided residents with a tangible action they could undertake each week to help reduce waste to landfills. The Blue Box program was successful for many reasons, but certainly the behaviour change to recycle was convenient, and made people feel good, and that they were contributing to a solution to the environmental problems of the time.

Over the years, the amount of material collected in the Blue Box program has grown to almost 1 million tonnes of consumer packaging and printed paper, as shown in Figure 1. The slight dip in 2007 is as a result of LCBO glass being collected separately through a deposit return program. The chart shows the steady increase in tonnages collected year over year as Blue Box recycling behaviour becomes more normative, and policies such as bag limits, user pay and bi-weekly garbage pick up (encouraging people to recycle more) take effect.

Figure 1: Growth in Recyclables Collected Through Ontario Blue Box Program



Participation and Recovery of Recyclables Through Blue Box Program

The effectiveness of recycling programs are evaluated by three measures:

- **Participation:** how many people participate in the program. For most recycling programs in Ontario, participation is measured at about 90% of all households;
- **Capture:** of those households who participate, the accuracy of how they set out materials and include them properly in the recycling or other program. Capture varies by material, and depends on how clear the instructions are and how easy it is to recognize the materials, and
- **Recovery,** which is participation multiplied by capture rate, and expresses the amount of material actually collected compared to the amount available for collection. As an example, for materials where 90% of the public participate and get it right 90% of the time, actual recovery of the material can only reach a high of 81%, therefore 19% of the available material will be lost.

Both participation and capture can be increased by policies such as pay as you throw or bag limit programs which force more behaviour change towards increased recycling levels.

Current recovery of materials in Ontario's Blue Box program for 2007 (the most recent year for which information is available) varies by material as shown in Table 5. the overall recovery rate is 63.5% for those materials listed, but varies significantly by material from a low of 22% for plastics to high values of 83% for glass and 79% for printed paper. The table also shows the targets proposed in Waste Diversion Ontario's proposals for review of the Blue Box Plan[10], which would impose substantial increases in the amount of materials collected.

Table 5: Recovery of Materials in Ontario's Blue Box Program, 2007

Material	Tonnes Recycled 2007	Calculated Generation (tonnes)	Recycling Rate 2007	Prop 5-year targets (WDO)	Tonnes To Be Recycled
Printed paper	500,083	633,016	79%	85%	538,064
Paper packaging	202,744	349,559	58%	70%	244,691
Plastic packaging	52,982	240,927	22%	50%	120,414
Steel packaging	33,365	59,580	56%	70%	41,706
Aluminum packaging	10,227	26,223	39%	50%	13,112
Glass packaging	66,569	80,204	83%	85%	68,173
TOTAL	865,969	1,389,409	63%	74%	1.026,160

[10] Waste Diversion Ontario – Draft Preliminary Report for Consultation – Blue Box Program Review, February 6th, 2009

5.3 How Ontario's Blue Box Program Accomplished Behaviour Change

Ontario's Blue Box program successfully changed behaviour in Ontario residents. Many factors contributed to the success of the program:

- It was introduced in mid 1980's, depending on location – it was driven by local grass roots initiatives that focused on waste. The time was right for curbside collection for many reasons;
- It moved householders to recycle , from bagging garbage to diverting it;
- From the outset, participation rates and the volume of recyclables was beyond expectations;
- The urge to recycle swept across populations – it tapped into consumption and waste guilt – people felt that if they recycled it counteracted the excesses of consumerism;
- It became politically smart to support recycling– politicians knew they had to support recycling, not landfilling;
- The mass media picked it up – landmark items such as William Rathje's archeological dig of landfill sites caught the public's attention, as did documentaries, New York's toxic waste barge, etc. Recycing became something tangible that people could do in their own lives to address various environmental problems being profiled constantly in the popular press;
- Waste and garbage was 'in your face', an undeniable symbol of the worst of consumerist society; recycling offered redemption and guilt reduction;
- Women, usually the main controller of household purchasing, food preparation and cleaning took charge and embraced curbside and drop off recycling.

Ontario's Blue Box program through the following approaches:

- It retrained mature adults and instilled recycling behaviour into new generations;
- It created solid waste material experts;
- First the 'easy' items were included in the program: newspaper;cans and glass jars;
- Then corrugated cardboard, fine paper , magazines, all paper (including glossy stock and envelopes with windows), plastics (#1 and #2), then others, including empty paint cans, aerosol containers, styrofoam, etc.;
- It taught recyclers how to prepare materials – remove labels/leave them on, take caps off or leavecaps on, rinse food and drink containers, cut down and flatten cardboard boxes, bundle newspapers, no plastic bags/blue boxes only, etc.
- It trained some recyclers to switch to blue bags from reusable boxes.

5.4 Moving From Recycling Behaviour Change to Organics Behaviour Change

Organics diversion started with backyard composting (40% Ontario penetration). This was a complicated task for the uninformed; fears (of nuisance factors); inconvenience (in winter), lack of space in small urban gardens and ignorance of how the composting process worked (and occasional odours) impeded progress and broad behaviour change in this area.

Over time communities replaced do-it-yourself organics diversion through backyard composters with organics collection – cities made it easy and provided the tools, including incentives through reducing garbage collection to bi-weekly frequency. This resulted is high participation.

The success of Blue Box collection was followed by the introduction of separate leaf and yard waste in many Ontario communities in the late 1980's and early 1990's. Convenient collection of leaf and yard waste became a requirement of Ontario Regulations 101-104 introduced in 1993.

By the time collection of yard waste was added to residential waste diversion programs after a few years, source separation of waste streams from the household was an accepted behaviour. Acceptable containers switched from plastic bags to kraft bags without too much difficulty (through strict enforcement of a leave- behind policy).

The focus then moved to the household organics stream (one third of household garbage, and the most challenging item from a source separation point of view), with many Ontario communities pilot testing different approaches in the 1990's and moving to full scale curbside household organics programs in the last few years. Backyard composting programs could only address a limited number of materials (leaf and yard waste and vegetable kitchen scraps), leaving significant amount of organic waste being disposed in the garbage stream. Curbside organics collection is now available to residents in over 20 Ontario municipalities, including all GTA municipalities. The result of all of these programs combined is a significant increase in single family waste diversion to the current rate of over 50%.

5.4 City of Toronto Diversion Programs

The City of Toronto has invested significant time and effort in increasing residential and municipal waste diverted through the Blue Box and other programs over time, particularly with the pressure to eliminate export of waste to Michigan landfills after 2010. The various programs to divert City of Toronto waste are outlined in the Target 70 Report11. Table 6 shows the tonnage of different materials diverted annually since 2001.

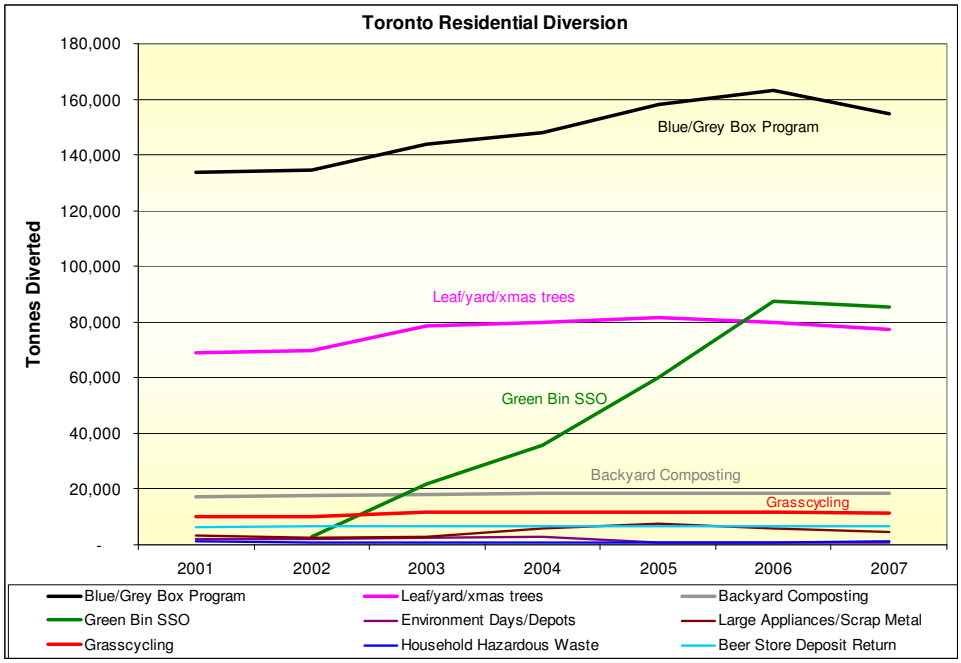
Table 6: Annual Diversion of Residential Waste in City of Toronto, 2001 to 2007 (tonnes)

	2007	2006	2005	2004	2003	2002	2001
Blue/Grey Box Program	154,799	163,385	158,116	147,936	143,853	134,623	133,922
Leaf/yard/xmas trees	77,509	80,069	81,574	80,069	78,598	69,778	69,124
Backyard Composting	18,652	18,554	18,460	18,324	18,171	17,791	17,340
Green Bin SSO	85,552	87,505	60,273	35,808	21,929	2,976	
Environment Days/Depots	860	768	843	2,858	2,408	2,112	2,184
Large Appliances/Scrap Metal	4,422	5,908	7,450	6,036	2,773	2,678	3,504
Grasscycling	11,296	11,680	11,936	11,635	11,650	10,085	10,051
Household Hazardous Waste	1,086	1,015	808	863	865	781	1,220
Beer Store Deposit Return	6,545	6,737	6,690	6,629	6,588	6,535	6,457
LCBO Deposit Return	6,570						
Diversion in Tonnes	367,291	375,621	346,150	310,158	286,835	247,359	243,802
Waste	497,809	509,403	527,878	565,910	621,322	639,443	671,062
Diversion and Waste	865,100	885,024	874,028	876,068	908,157	886,802	914,864
Diversion in %	**42%**	**42%**	**40%**	**35%**	**32%**	**28%**	**27%**

[11] At its meeting of June 19, 20 and 22, 2007, City Council adopted, as amended, the recommendations in Executive Committee report EX9.1 entitled "Proposed Initiatives and Financing Model to Get to 70% Solid Waste Diversion by 2010" (the "Target 70 Report").

The table shows the steady decrease in waste landfilled from 671,000 tonnes in 2001 to 498,000 tonnes in 2007. This reduction has been achieved through a combination of policies (e.g. bi-weekly garbage collection), education programs and adding new materials to the diversion programs, particularly the Green Bin program, which was introduced between 2002 and 2005. The data is presented graphically in Figure 2.

Figure 2: Diversion of City of Toronto Residential Waste, 2001 to 2007



The City of Toronto Communications Department develops and implements communication programs for ten divisions including waste management, water use, climate change and Live Green, among others. The department has been involved in developing communications programs and developing community outreach campaigns and website information for the Blue Box program since 1989. Staff from the Department sit on the Waste Diversion Ontario Public Affairs Committee. The Communications Department includes twelve dedicated communications staff. The department carries out extensive public attitude research, and qualitative research at the outset of each public education and outreach campaign. Recent campaigns include educating the public on how to handle oversized items with the launch of the new garbage bin program (Place them beside the bin); instructions related to the addition of expanded polystyrene foam and plastic bags to the Blue Bin program. Success of the public education programs is measured by increased tonnages collected over time. Figure 3 shows how waste diversion has increased between 2001 and 2007 and that waste to landfill has decreased substantially over time through the provision of convenient diversion options, combined with sustained promotion and education and policies which encourage and incent diversion behaviour.

Communications Department staff sit on the Behaviour Change sub-committee as well as on the Hot Drink Cup Taskforce, as they will be involved in whatever campaign is required as a result of the Hot Drink Cup consultation process.

Figure 3: Decrease in Waste and Increase in Diversion of Residential Waste in City of Toronto, 2001 to 2007

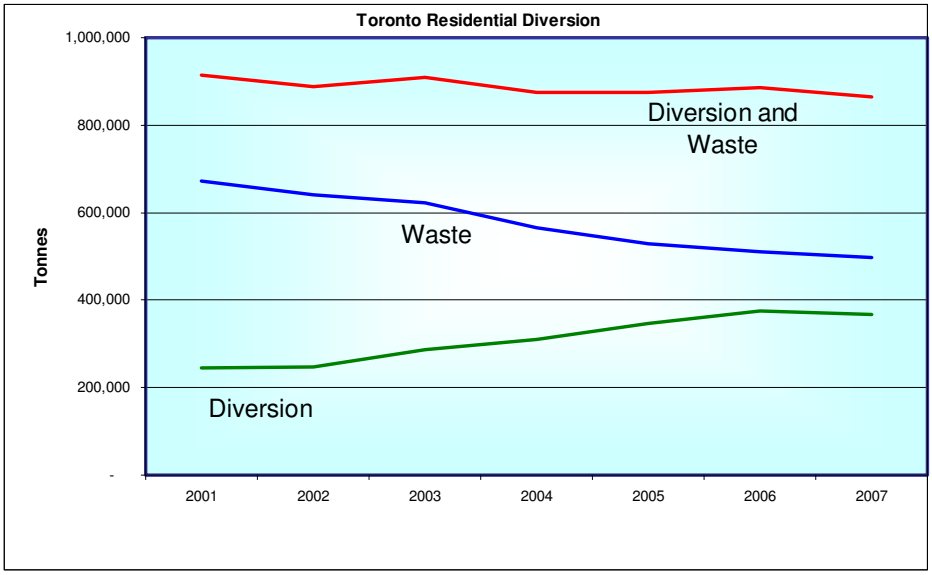
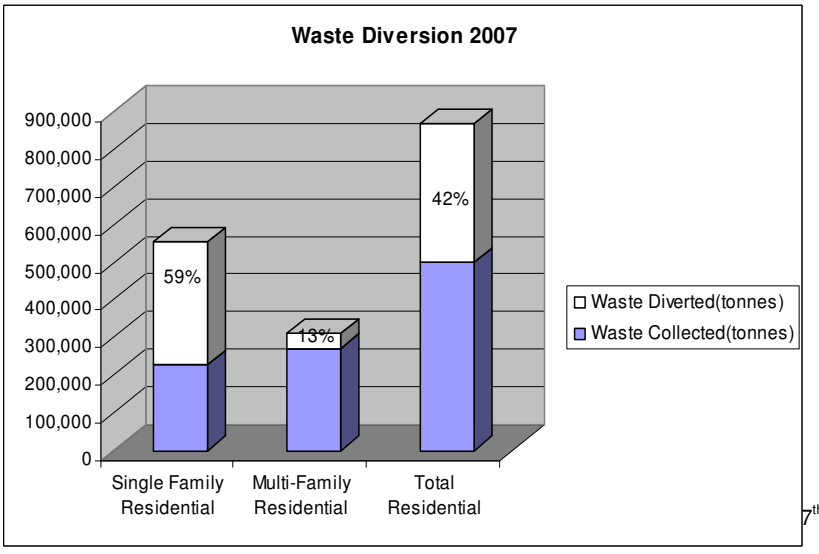


Figure 4 shows that in 2007, most of the diversion occurred through single family waste households, which have convenient diversion systems throughout the City. A much smaller amount of the total diversion is from multi-family buildings, where diversion is less convenient.

This chart illustrates the critical importance of convenience to recycling program success. For instance, when recycling becomes as convenient or more convenient than disposing of material in the garbage, recycling levels increase. Changing to bi-weekly garbage collection service has increased recycling levels anywhere from 13% to 17% in various Ontario communities. This approach has typically been introduced in Ontario communities at the same time as Green Bin service.

Convenience will need to be a key feature of future hot drink cup recycling programs if they are to achieve high participation and capture rates.

Figure 4: Comparative Waste Diversion From Single Family and Multi Family Households in City of Toronto, 2007



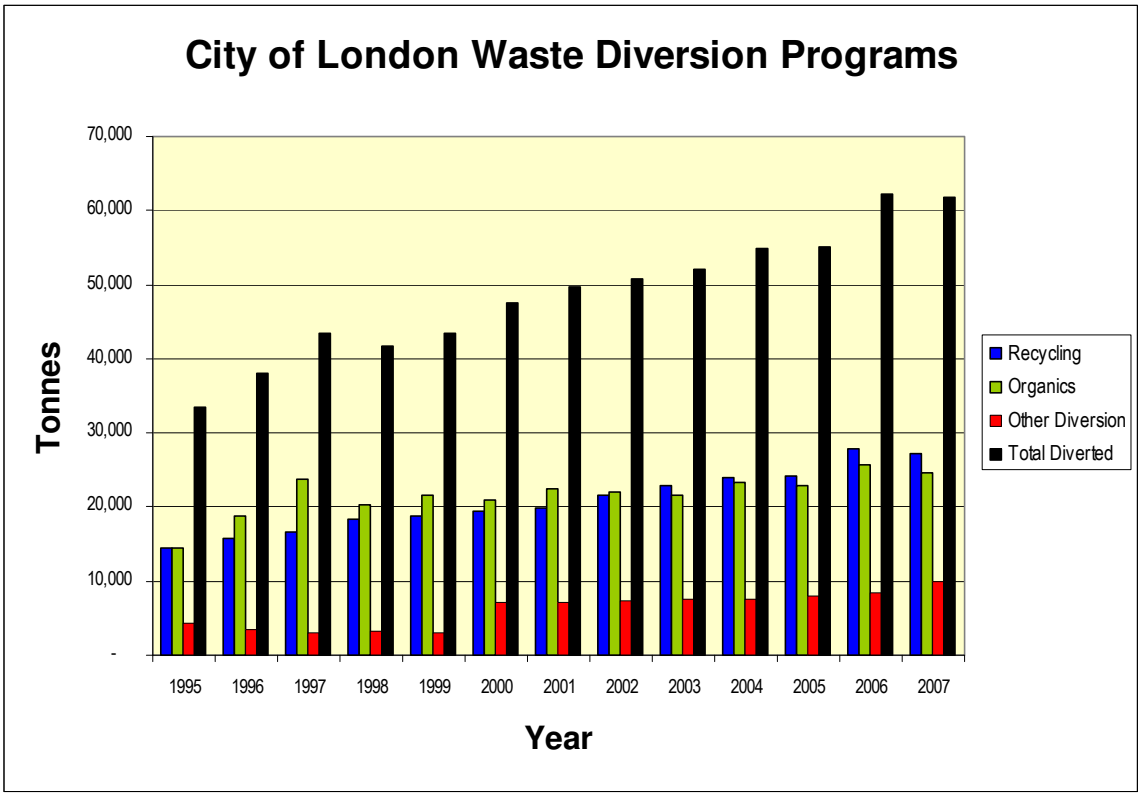
5.5 City of London Diversion Performance

The City of London has pilot tested and implemented numerous promotion and education campaigns related to recycling and waste diversion over many years. These include:

- London's 10% Club
- Pilot testing Recycling Works;
- Think outside the Can – Recycle MORE
- London Cares Curbside Food Drive

All of these programs combined have resulted in more waste being diverted through City of London programs each year, as shown in Figure 5.

Figure 5: Performance of Waste Diversion Programs in London, Ontario, 1995 to 2007



In the London 10% Club campaign, he City carried out detailed monitoring which indicated that about 10% of residents are hard core non-recyclers for a variety of reasons. A hard hitting education campaign was targeted at the "10% Club" with Council support. 26% of the non-recyclers in one control group started participating following the campaigh; 40% of the non-recyclers participated after delivery of the communications piece. The long term impact of the program is not known.

In the London Cares program, Blue Box recycling was linked to community sustainability and community spirit. The amount of material collected has grown each year from 16 tonnes of food donated to the food bank in 1997 to 37 tonnes donated in 2007.

The Recycling Works campaign was field tested in City of London in 2006-2007. two flights were carried out over four months starting in October, 2006. The City measured the tonnage collected in this period but it is hard to attribute the increased tonnage to one campaign only as other policies (container limits) and other campaigns (Think Outside the Can and Recycle MORE) were happening at the same time. Compared to previous years, recycling during the Recycling Works campaign resulted in an increase in an increased revenue of $50,000 compared to 2005 and $200,000 compared to 2004. City staff estimated that the program would result in an increase of $150,000 to $600,000 in material revenues if sustained over a full year, based on an average revenue of $110 per tonne.

5.6 Promotion and Education Campaigns Targeting the Recycling Of One Particular Material or Container

Various Ontario communities have delivered very specific campaigns targeting one particular material in the Blue Box. Some of these programs are presented in this section to highlight the potential impacts of promotion and education programs targeting one material on recovery of that material over time. Lessons from these programs stress the importance of keeping the message simple, and making the required action convenient. These will be critically important in campaigns to encourage Toronto residents and commuters to use reusable hot drink cups and recycle polycoat hot drink cups when a recycling program is implemented.

Don't Trash Cans

In 1997, CSR launched the "Don't Trash Cans" campaign in Metro Toronto. The campaign aggressively used mass media, social marketing and special events campaigns targeted at boosting aluminum beverage can recovery. CSR worked with 13 regions and municipalities (Toronto, Barrie, North Bay, London, Markham, Muskoka, Northwest Ontario Recycling Association and regions of Waterloo, Halton, Sudbury, York, Haldimand Norfolk and Niagara). Radio advertisements, newspaper ads, outdoor ads, billboards and transit shelters were all used to promote the program. Partner municipalities also added to the scope by undertaking media relations and direct mail programs . In Toronto, the first three months of the campaign saw a 26% increase in the number of aluminum cans collected compared to the same 3-month period from the year before. Ten of the other communities experienced double digit increases in the amount of aluminum collected.

An Angus Reid telephone survey conducted in Toronto after the campaign found that more than 50% of respondents were aware of the recycling promotion and more than 30% key the message that "recycling one more can a week" could add significant revenues to municipal recycling programs.

All Bottles Plastic Recycling Programs

The recovery of plastics in recycling programs is hampered by the complexity of the numerous different plastics in consumer packaging and consumer confusion regarding which plastics are included in their recycling program, as the list of plastics varies by municipality. Overall recovery of plastics in Ontario recycling programs is 22%, compared to 83% for glass, where there is no confusion regarding the recyclability of the material.

PET and HDPE are the plastics with the highest market value in the Blue Box program, therefore a few communities have focused on recovery of these plastics through simple "All Bottles" campaigns where the message to the consumer is simply to recycle ."all plastic bottles with a twist off cap". The messages in these campaigns focus on simplicity:

- Recycling Plastics is now easier
- No need to check for a recycling code
- Include all bottles with a twist off cap.

Recoveries have been found to steadily increase as residents understand which materials should go in the Blue Box. Results from some of these programs are presented below.

Essex Windsor Solid Waste Authority All Bottles Program

The Essex Windsor Solid Waste Authority (EWSWA) "all bottle" program rolled out in the Spring of 2002. Table 7 shows the percentage increase in the capture of PET and HDPE since the implementation of the all bottle program. Incomplete data are available for 2005 as there was a fire at the EWSWA MRF and material was marketed in mixed bales.

Table 7: Increase in PET and HDPE in Essex Windsor Solid Waste Authority "All Bottles" Recycling Program 2002 to 2008

Year	PET tonnes collected	Percentage Increase in Tonnes Collected	HDPE tonnes collected	Percentage Increase in Tonnes Collected
2001	383		4	
2002	439	14.6%	107	109.3%
2003	531	21.0%	224	20.5%
2004	662	24.7%	270	36.7%
2005	Incomplete data		Incomplete data	
2006	760		376	
2007	875	15.1%	415	10.4%
2008	928	6.1%	472	13.8%

EWSWA installed an optical sorter for PET and HDPE in June 2008 and expect to see another increase in 2009.

Brockville 2008 "All Bottles Plus" Pilot Program

A pilot program was carried out in City of Brockville, Ontario in July 2008 to test methods to increase recovery of PET bottles and containers in the Blue Box program. The short duration campaign consisted of 2 newspapers ads and a direct mail piece with a focus on PET bottles/containers. The communications demonstration project was supported by Stewardship Ontario who wanted to deepen the capture of core materials, see what has an immediate impact; learn what works and prepare for outreach to municipalities.

Telephone survey results (Pre and Post the pilot period) determined that 70% of respondents were aware of one or more of plastics campaign ads (71% of women & 66% of men). One in four message-aware residents reported that they were influenced to recycle more plastics and some reported that they recycled more of everything.

Waste composition studies Pre and Post the media campaign found that the capture rate of PET bottles increased by 0.93 kg per household per week – a 10% increase. Diversion rates of other materials also increased. This finding is consistent with previous material-focused campaigns. Results from the Brockville Demonstration Project on materials collected for recycling are presented in Table 7 . Generally:

- Recall of advertisements was high (aided and unaided);
- The highest recall was for direct mail highlighting PET water bottle information;

- Hits to www.blueboxmore.ca increased significantly and
- Recovery rates generally increased[12].
-

Table 7: Results of City of Brockville Summer 2008 "All Bottles Plus" Campaign

Material	Increase in Material Capture
PET Bottles	+14%
HDPE Bottles	+1%
Other Bottles	-2%
Tubs and Lids	+13%
Plastic Contamination (% of plastic down 2%)	+8%
Overall Other Materials	+6%

Region of Durham All Bottles Campaign

The Region of Durham launched an "All Plastic Bottle" Recycling program in 2002. Promotion and education messages were simple. Messages were promoted through a variety of media:

- On-going newspaper advertising;
- Collection vehicle signage;
- Weekly radio adds (30 second messages on three local stations, custom waste reduction jingle)
- Public presentations;
- Public events and displays
- Regular television segments on local stations and
- Waste information guides.

The municipality increased its recovery of PET bottles by 19% from April to September, 2003, compared to the same period in 2002.

The capture of PET soft drink containers increased from 46% in 2002 to 78% in 2003. Capture of other PET increased from 60% in 2002 to 67% in 2003. Capture rates for other materials in 2003 were: HDPE (44%); PVC bottles (25%); LDPE and polypropylene bottles 12% and #7 bottles 55%.

5.7 Away From Home Recycling Research

NAPCOR (the National Association of PET Container Resources) carried out extensive research on away from home venue recycling in partnership with the Association of Post Consumer Plastic Recyclers (APR) through a grant from the USEPA. Research results are documented in a comprehensive report on venue recycing[13]. Large venues include airports, amphitheaters, amusement parks, arenas, aquariums, conferences or civic centres, museums, halls, horse-tracks, performance arts centres, racetracks, stadiums, theatres, zoos and other facility attractions.

Objectives of the study were to:

[12] Developing Markets for Blue Box Plastic Packaging in Ontario – Presentation at Ontario Recyclers Workshop, Guy Perry, Stewardship Ontario, 2008.
[13] Venue Recycling in the USA 2008

- Identify and characterize venues and events and capture basic data;
- Estimate the total volune of containers potentially available for recycling at these venues and events and
- Identify successful models for recycling based on venue category, as well as categories for which were are no successful (or only moderately successful) models currently in use or in trial).

It was felt that some of the learnings from the extensive research could be applied to the Toronto hot drink cup issue. The report was reviewed and the author interviewed as part of this study research, although limited information which was directly applicable at this time was discovered through the research.

The report had been initiated because of the flattening rate of PET container recycling and researchers concluded that the increased portability of PET drink containers and the fact that purchasing and consumption was "on the go" instead of at home consumption was contributing to the flattening recycling rate. Fans at sports events liked PET bottles because they did not spill (when compared to drink glasses) and could be carried in a jacket pocket when hands were otherwise occupied with food trays. Washington and California mandate venue recycling programs and plans, therefore a best practices review was undertaken.

Hot drinks at the venues researched are sold in paper and plastic cups. Limiting the choice of cups (to one material - expanded polystyrene) was identified as a best practice to simplify recycling at the Minnesota State Fair, where 500 volunteers helped to launch the recycling program. Management at the Fair decided that no vendor could bring in their own cups and that all cups for hot and cold drinks (all EPS) had to be bought from the administration.

Six key guiding principles for venue and event recycling were identified through the research:

- Key stakeholders must be identified and included early in the decision making process;
- Recycling programs must reflect a full understanding of the collection and disposal costs of recyclables as trash;
- Planners must have access to complete sales data from the event or facility to accurately predict volumes and weights of recyclables;
- Program planners must have the ability to track and record recovery numbers accurately;
- Programs should maximize material recovery with the least disruption to the status quo, and do this by being integrated into the existing solid waste management system and
- There must be access to a reliable local maket that receives, sorts and densifies the recovered material.

Merchandise or promotional incentives were found to be effective at the Moondance Jam, a music festival in upper Minnesota. Bandannas with the name of the event, a list of performers and recycling information were provided as give-aways to fans using recycling stations. At one NASCAR race, shop towels and posters featuring a popular driver were successful at motivating fans in campgrounds to deliver bags of recyclables to centreal locations. At the depots, these fans could then enter a lottery for a grand prize – a ride around the race track with afavourite driver. Young fans especially appreciated the prizes[14].

5.8 Lessons From Other Public Education Campaigns Which Are Applicable to Education on Hot Drink Cup Issue

[14] Venue Recycling in the USA, 2008. NAPCOR p33

The programs profiled in this section clearly illustrate that public education campaigns are one element of bringing about consumer behaviour change related to using particular containers (e.g. a refillable mug) or recycling specific materials (e.g. plastic bottles, hot drink cups, etc) , and that the public can be educated and motivated over time to participate in recycling programs. The key lessons learned over time are:

- People learn incrementally;
- Make it easy – it must be convenient to get wide scale compliance with a reuse or recycling program;
- Provide clear guidance on the actions needed through public education – annual lists of what can and cannot be recycled have been successful throughout Ontario, websites are now where particularly younger consumers find their information, etc.
- Neighbourhood Pressure is successful at getting consumers to change behaviour. Neighbours monitor each other's recycling practices;
- Good reuse and recycling practices have community support;
- Move slowly, step by step – introduce changes gradually;
- Keep repeating the basics – public education is required on an on-going basis, and sustained public education and promotion is essential to the success of any reuse and recycling program which requires consumers to change their behaviour;
- Provide the tools required for successful reuse and recycling of hot drink cups – in the past, blue/grey boxes, recycling bins, green bins, kitchen catchers etc. were all necessary elements of the municipal waste diversion programs which are successful today. For hot drink cups, both reuse and recycling must be convenient and easy to do.
- Set new goals and keep people informed.

The applicability of these lessons from Blue Box recycling and other diversion programs aimed at Ontario consumers over the last 20 years are applied to the hot drink/coffee cup issue in the conclusions to this report (Section 9).

6. Social Marketing Programs and Effects or Impacts

Community-based social marketing uses an interactive approach with community members to change attitudes and behaviours. Social marketing techniques elicit a commitment by the individual to engage in a positive behaviour. The positive feelings resulting from the behaviour act as an incentive or stimulus to maintain the desired behaviour.

By engaging an individual and asking for a personal commitment, people are more likely to make tangible and long-term changes to their attitudes and behaviours. Common approaches employed in social marketing involve signing pledges, making verbal commitments, placing signs on lawns, and using feedback. This section outlines examples of where social marketing campaigns have been successful in altering consumer behaviour, and some lessons learned from these campaigns that may be applicable to the hot drink cup issue.

6.1 Social Marketing Principles and Examples

Table 7 outlines seven social marketing "rules" and lists examples of how they have been applied to programs familiar to Ontario residents.

Table 8: Social Marketing Rules Applied to Familiar Behaviour Change Campaigns

Social Marketing Rules:

Social Marketing Campaign Rule #1: Action is Clear and Unambiguous
• Use simplicity and direct messages.
• Consider challenge of cultural & language diversity.
• Examples of clear action:
  ○ Stop smoking,
  ○ Don't smoke at home (harms children and non smokers),
  ○ Don't drink and drive,
  ○ Pesticide ban.

Social Marketing Campaign Rule #2.: The Required Action is Convenient and Easy to Do • Curbside recycling is very convenient • Multi-residential recycling is less convenient and has lower participation and capture • MHSW new retail drop-off
Social Marketing Campaign Rule #3. The Required Behaviour Change Makes Sense • Good for my/family health (smoking cessation, eat 5 to 10 fruit and vegetable portions each day, eat nutritious food, drink milk), Community impacts (do not litter, recycle), • Environment (pesticide ban, recycling, proper disposal of MHSW) • Brands their community (windturbine)
Social Marketing Campaign Rule #4: The Required Behaviour Change Involves Public Participation and Has Community Buy -In • Bandwagon effect - everyone else is doing it; I should do it also • Behaviour becomes the social norm; not doing the behaviour is socially unacceptable • This occurred with curbside Blue Box recycling, smoking, drinking and driving

Social Marketing Campaign Rule #5: The Required Behaviour Change Involves A Reward or An Avoidance of Penalty • Behaviour change feeds into belonging, conformity, (curbside recycling), health, economic , feel good/guilt reduction Non monetary rewards – e.g. your community has diverted 60% of its waste
Social Marketing Campaign Rule #6: Residents Are Provided With Education and the Means to Act Sufficient information is provided, e.g. - recycling bins & lists, quit smoking kits, water reduction (kits, price increases) - ongoing messaging, informing, motivating & giving feedback
Social Marketing Campaign Rule #7. Residents Must be Motivated To Change Behaviour

6.2 Social Marketing Campaigns On Specific Environmental Behaviour Change

Social marketing campaigns have been developed to encourage residents and consumers to alter their behaviour on a number of environmental issues. Some examples are briefly described in this section with details in Appendix B to this document.

6.2.1 Count Me In! Climate Change Education Campaign

The *Count Me In!* [15]workshop was designed to communicate the issue of climate change to the Canadian public through workshops delivered to groups of 25 to 30 people at their place of work and was delivered in 1999-2000, before the general public were aware of climate change. The workshop explained climate change, and then focused on 30 actions which people can do in their home lives and while travelling to reduce greenhouse gas (GHG) emissions. The workplace was chosen as a strategic location to access large groups of Canadians.

The design of the workshop and follow-up/monitoring program was based on adult learning and social marketing principles regarding behaviour change:

> A personal commitment made along with a group of peers (which feels safe) is likely to be met;
>
> A written commitment is more likely to be followed through, and
>
> Prompts after the initial commitment (particularly when people know the prompts will arrive) spur people into action.

Details are presented in Appendix B to this document.

Participants were followed up at different times following the workshop by email, fax and mail. The total response rate for all participants was almost 40%.

[15] The Count Me In! program received 'Ontario's Top Training Excellence Recognition (OTTER) Award' by the Ontario Society for Training and Development (OSTD), Canada's largest association dedicated to the profession of training and development.

One of the elements of the research was to compare what people pledged to do with what they actually did (self reported).

Many of these activities required minor changes in behaviour and minimal capital expenditure. The action most often completed involved installation of water saving devices, which were distributed or discussed at the workshop. Participants did not pledge to do this at the workshop, but once they realized how easy this was to do, and how much money and GHG could be saved, they completed this action after they went home.

The key learning from this result, also applicable to the hot drink cup issue, is that people do not always do what they say they will do; the converse is that once awareness is raised, people will carry out convenient actions if they are motivated by understanding that they have positive benefits.

Two months after attending the *Count Me In!* workshop, participants that completed the survey, reported that since the workshop they considered themselves to be more aware about:

- climate change (92% more aware);
- personal energy use (91% more aware);
- articles in the newspaper and magazines about climate change (76% more aware); and
- TV programs on climate change (53% more aware).

6.2.2 Do-It-Yourself Oil Changers in California

Some social marketing campaigns involve identifying the specific barriers to a recycling behaviour and then addressing the barriers, thereby increasing the convenience of the desired behaviour change. In a research report for the California Integrated Waste Management Board[16], Community based social marketing approaches were tested in three communities (Los Angeles County, Napa County and Madera County). Results of the three campaigns are summarized in tables in this section.

Los Angeles County

In Los Angeles County, DIY (do it yourself) oil changers were being turned away from community recycling centres because they lacked proper collection containers. The community based social marketing (CBSM) solution was to distribute free oil collection containers affixed with motivational prompts or regular promotion and education materials to DIYers at auto parts stores. Results are presented in Table 9.

[16] Community Based Social Marketing Pilot To Increase Do-It-Yourself Oil Recycling Rates, Report to California Integrated Waste Management Board by California State University Foundation

Table 9: Results of Social Marketing Campaign on DIY Oil Change Behaviour in Los Angeles County, California

Group	Community Based Social Marketing Intervention	Increase in Desired Behaviour Change
Community Based Social Marketing Test Group 1	1,468 customers received free oil collection containers containing the standard CIWMB "Recycle Used Oil and Filters" sticker at four Kragen Auto Parts Stures	6% increase in volume of oil collected compared to control group
Community Based Social Marketing Test Group 2	Another 1,476 customers received free oil collection containers affixed with a motivational "Take the Last Step" sticker at an additional four Kragen stores	22% increase in volume of oil collected compared to control group
Control Group	A control group of customers at another 8 stores received no collection containers.	

The greatest success was measured in the group which received the free oil container (thereby increasing convenience) along with a motivational sticker. This approach increased the volume collected by 22% compared to the group which only received regular promotional material with the free oil container.

Napa County, California, DIY Oil Changer Social Marketing Campaign on Curbside Oil Collection

The majority of surveyed DIY residents did not know enough about the county's curbside oil recycling program or were not motivated enough to use it. Many also believed that their fellow DIY residents infrequently recycled their used oil. The CBSM intervention was to send residents informational curbside program enrollment mailers containing testimonials from community role models about the value of the program.

Napa County had 1,026 DIY households that could potentially use the program but only 339 of these were enrolled in the program. Two control groups received different social marketing pledge approaches (call in number and mail in card). The material distributed included testimonials from well known Napa residents, including their photographs, claiming their use of the curbside oil collection service.

Table 10: Results of Social Marketing Campaign on DIY Oil Change Behaviour in Napa County, California

Group	Community Based Social Marketing Intervention	Increase in Desired Behaviour Change
Community Based Social Marketing Test Group A Napa County	Brochures sent to residents included a call-in curbside oil enrollment number	22% increase in oil enrollment (15 participants)
Community Based Social Marketing Test Area B, Napa County	Brochures sent to residents included a mail in curbside oil enrollment card	45% increase in oil enrollment (25 participants)
Control Group	No invervention	No increase

The program resulted in a 248% increase in the number of curbside oil pick-ups in the month immediately following the intervention. Results by area are presented in the table below.

Madera County, California

In Madera County, distribution of gift certificates, oil funnels and commitment pledges were tested to see if they would increase the recycling of used oil by DIY practitioners. Results of three approaches are presented in Table 11.

Table 11: Results of Social Marketing Campaigns on Used Oil Recovery Behaviour in Madera County, California

Group	Community Based Social Marketing Intervention	Increase in Desired Behaviour Change One Month After Receiving Package
Group 2	$5 gift certificate, brochure and an oil funnel	0% reported improper disposal 40% reported recycling their oil at a CCC
Group 3	$5 gift certificate, brochure, oil funnel with an oil recycling pledge sticker	0% reported improper disposal 37% reported recycling their oil at a CCC
Control Group	$5 gift certificate and used oil recycling brochure	6% reported improper disposal 22% reported recycling their oil at a CCC

The conclusion of the study was that receiving a free funnel increased DIYers reported intent to recycle their used oil but the additional pledge sticker did not further increase this intent level.

6.3 Social Marketing Techniques - Pledges, Report Cards, Person-to-Person Reinforcement, Competitions and Challenges

Social marketing campaigns often use a range of approaches, including pledges, report cards, person to person reinforcement, competitions and challenges to engage the public and convince them to change their behaviour, using a combination of marketing techniques and social support, reinforcement and pressure. Some examples are described in this section.

City of Toledo, Ohio –Pledge to Recycle Program

The City of Toledo implemented a pledge program in spring of 2007 to increase recycling rates. The pledge program also has a strong economic incentive component, as garbage fees are reduced when households pledge to recycle.

The City Council established a $7.00 monthly garbage fee, which is reduced by $2.50 for people who pledge to participate in curbside recycling. The City distributed about 2,000 sets of recycling starter kits to local retailers and public libraries. The starter kits contained the pledge cards (which needed to be mailed back to the city's Department of Public Utilities) as well as bumper stickers that could be affixed to a durable bin or container to hold recycling items. Pledge cards also were placed in recycling bins placed out for collection. The cards can also be downloaded and printed from the City's website.

Residents are required to mail back the pledge card with all information required or complete the pledge on line. The addresses that pledge to recycle are recorded in a city billing database and

will be credited on quarterly water and sewer bills. Failure to honour the pledge can result in a $US50 fine with the monthly garbage fee reverting to the full amount.

Figure 6: City of Toledo "Pledge to Recycling" Form

As of summer 2008, the City received over 22,000 pledges (about 25%) from a possible 90,000 establishments (including single-family households, commercial buildings, trailer park homes that receive curbside collection services).

In its 2009 budget, the City planned to increase the fee for garbage (if you don't recycle) to $8 in May 2009 and $10 in May 2010. Garbage fees for recyclers were scheduled to be reduced to $1 per month in 2009 and zero in 2010, providing a strong incentive to pledge to recycle.

Durham County, United Kingdom – School Pledge Program

Durham County Council involved primary schools in a pilot program to get school children to solicit family members to pledge to recycle. Schools participating in the pilot were rewarded for the number of pledges obtained by the students.

Pledge books were distributed to all 241 primary schools within County Durham. School children were then asked to collect pledges from family members and friends promising to recycle. The pledges equated to points that the schools could cash in for individual school prizes (which were claimed from a dedicated catalogue). The school that achieved the most pledges also won a cash bonus prize. In order to keep the children motivated, small prizes were allocated to each individual child participating during the pilot.

The majority (82%) of people who had made a recycling pledge said that it had encouraged them to recycle more. Recycling tonnages increased by approximately 13% compared with the previous year suggesting that the incentive program had a positive impact on recycling habits among pledgers

City of Ottawa, Ontario - Recycling Report Card

As part of it's Rethink Garbage campaign, the City of Ottawa published a report card in 2005 providing feedback to citizens on the recycling program, presented in Figure 7.

Figure 7: City of Ottawa 2005 Residential Recycling Report Card

Newspaper	94 %	G	Excellent work! Congratulations Ottawa! Keep up the good work. Recycle all of your paper products.
Cardboard	90 %	G	Excellent work! Great job of making sure those corrugated boxes end up being recycled.
Plastic bottles #2	75 %	G	Good work — make sure you are recycling these highly valuable plastic bottles. Every tonne of this material landfilled is over $400 of revenue thrown away.
Plastic bottles #1 (PET)	73 %	G	Very good work — but make sure you check for the recycle symbol #1 and put these in your blue box ALL the time.
Soup and food steel and tin cans	72 %	G	Good work — make sure your soup, vegetable and fruit cans end up in your blue box, not in the garbage.
Milk and drink cartons	66 %	S	Between milk and drink cartons and juice boxes, Ottawa residents are throwing away almost 900 tonnes of these materials per year.
Boxboard	65 %	S	Hmm... We have a problem here. Not all your cereal, laundry and Kleenex boxes are being recycled! Residents of Ottawa are throwing away 2,620 tonnes of this material every year.
Aluminum cans	65 %	S	Fair — but make sure all your drink cans end up in your blue box.
Computer paper, envelopes and other household paper	51 %	N	These fine papers are all recyclable. Make sure you put them in your black box.
Juice boxes	21 %	N	Fail! This is not good at all! There is no reason why boxes are being sent to our landfill site. They go in the blue box.
Aluminum foil and trays	5 %	N	Fail! These items go in the blue box-not in the garbage. Average revenue in 2003 for this was over $1,500 per tonne! All revenues reduce costs of solid waste collection and processing. We have the power to do more!

G = Good S = Satisfactory N = Needs work

Block Leaders

Many communities with successful recycling and waste prevention programs, such as Boulder, Colorado; St. Paul, Minnesota; Seattle, Washington; and San Jose, California, have programs that use local residents to act as block leaders in helping their neighbours reduce, reuse, recycle and compost properly. The leaders are trained to understand the concepts of waste prevention, reuse, recycling and/or composting, as well as in the benefits of these programs. Training also helps them to get involved in talking to their neighbours, answering common questions and directing people on where to go for further information. These programs have proven effective because of the direct personal connection involved.

San Diego, California – Door-to-Door Canvassing

As part of the "Recycle or Else" campaign, the City of San Diego launched a number of outreach and communication strategies to achieve the following goals:

- Understand customer barriers,
- Develop programs to lower the barriers and increase the benefits,
- Integrate programs and communications, and
- Define clear, consistent message points.

One of the strategies employed in the campaign involved sending temporary staff to two targeted neighbourhoods in order to conduct door-to-door canvassing. During the canvassing the City representatives informed residents about the benefits of recycling and encouraged them to participate in the City's recycling program. As a result of the combined door-to-door canvassing and a door hanger program, participation increased from 36.8% to 69.7% of households in the one neigbourhood and from 51.6% to 59.8% of households in the second neighbourhood.

6.4 Lessons Learned from Social Marketing Campaigns

Social marketing programs have proven effective at bringing about behaviour change. Various aspects of social marketing (e.g. peer support in programs such as Weight Watchers and Alcoholics Anonymous) reinforce positive behaviours.

However, not all elements of social marketing are necessarily practical or appropriate where recycling coffee or hot drinks cups is concerned.

Therefore, some social marketing principles can be used to develop a broader public education and awareness campaign which would, over time, increase the use of refillable hot drink cups or mugs and increase the recycling of hot drink cups in Toronto, when a recycling program is launched.

Some specific learnings from social marketing campaigns include:

- People do not necessarily do what they say they will do;
- Awareness of an issue and the right motivational message can over time bring about behaviour change;
- Most if not all behaviour change is incremental and requires a long term commitment to a public education campaign;
- Convenience is a key component to the success of any recycling program – the behaviour requested must be convenient;
- The reasons for the behaviour change, and the benefit resulting from the behaviour change need to be clearly communicated to motivate people to take part in the behaviour change.

7. Economic And Other Incentives Which Change Behaviour

7.1 Mandatory Behaviour Change

Mandatory behaviour change refers to mechanisms which require residents to change their behaviour through by-laws and penalties which include a reduction in service or other punitive measures to force the behaviour change required. Examples of mandatory behaviour change include:

- Bag limit set outs for garbage (forcing people to alter their behaviour and increase recycling) where extra bags are simply left at the curb and not picked up;
- Wearing seat belts in cars: this eventually became a social norm when it became illegal (with fines) not to do so;

  Illegal dumping of garbage – this behaviour is generally controlled through fines and enforcement. In Kincardine, Ontario, illegal dumping stopped when illegally dumped garbage was announced in the local paper… *would Mr Smith please pick up the garbage he lost at City Hall and pay the cost of managing the garbage*;

  Mandatory recycling by-laws: recycling in Oakville, Ontario reportedly increased by 5% when a mandatory recycling by-law was introduced – when residents realized there was a by-law stating that recycling was required, compliance increased.

It is unlikely that mandatory measures could be imposed on Toronto citizens and commuters related to behaviour change and coffee/hot drink cup recycling, therefore this issue is not addressed in detail in this report.

7.2 Economic Incentives Which Result in Behaviour Change

There are many examples of economic incentives used to bring about behaviour change. The principle behind the use of economic incentives for behaviour change is that they send clear pricing signals to consumers. Economic incentives can be designed to bring about positive behaviour change (produce less garbage; recycle more; smoke less, etc.) Economic instruments which have been used to alter behaviour in the recycling and waste management area, as well as to alter consumer behaviour in related areas include:

- Pay as you throw programs for garbage (which increase recycling and source reduction);
- Levies for plastic bags;
- Congestion charges (to reduce driving):
- Refundable deposits for beverage containers, etc.

7.2.1 Impacts of Pay As You Throw Policies and Differential Garbage Fees on Consumer Behaviour

PAYT (Pay as you throw) programs require the householder to pay for all or a portion of the waste that is set out to the curb for disposal. The more the householder engages in waste diversion activities, such as recycling, composting and source reduction, the lower the amount of waste

requiring disposal and the lower the fees paid for disposal of the waste. There are many different forms of PAYT programs including variable fees based on container size to tags attached to bags.

PAYT and bag limits have proven very successful at increasing recycling levels in cities across North America. There is also significant evidence that when either of these policies is imposed on an existing mature recycling system, participation levels increase, and recycling tonnages are higher. In either case, a comprehensive diversion infrastructure must be in place before these policies are implemented, with sufficient capacity to handle the diverted materials.

The Association of Municipal Recycling Coordinators (AMRC) surveyed all Ontario municipalities with bag limits or any form of user pay in 2005. The final project report was completed in December, 2005. By that time, there were 123 PAYT programs in Ontario, of which 58 were full user pay programs (a charge for every bag).

The percentage increase in recycling tonnage resulting from the implementation of bag limits and user pay in the communities surveyed by AMRC in 2005 were reported to be:

Bluewater:	50%
Bonnechere	10%
Edwardsburgh-Cardinal:	>30%
Hanover	>12%
Mono	>25%
Orangeville	> 20%
Orillia	>20%

Blue Box tonnages increased by 22% in the first year following implementation of the user pay program in County of Oxford in 2003, and by 17% in the second year of the full PAYT program.

The City of Toronto (2001) conducted a study on the impacts of user pay and bag limits on diversion. Results of the study which was completed in 2000-2001 are presented in Table 12, along with data reported by the Region of Peel on the impacts of their 3-bag standard, implemented in 2002/2003.

In all cases in the 2001 study, the impacts of any mechanism to limit the amount of waste disposed, or charge by waste disposed, clearly brings about a change in recycling behaviour and increases Blue Box tonnages. These findings illustrate the success of economic instruments to change behaviour, particularly when the behaviour which reduces consumer costs is convenient (e.g. putting recyclables in the Blue Box rather than the garbage – both are equally convenient).

Table 12: Impacts of Pay as You Throw (PAYT) and Bag Limits on Waste Diversion and Behaviour Change

	Change in Amount of Residential Waste Disposed	Change in Amount of Recycling	Base Year Before Bag Limits and Unit Pricing Introduced	Comparison Year After Bag Limits and/or Unit Pricing
Peterborough, Ontario	-21%	+49%	1993	2000
Markham, Ontario	-8%	+6%	1997	2000
Georgina, Ontario	-38%	+46%	1996	1999
Barrie, Ontario	-16%	+22%	1996	1999
Orillia, Ontario	-23%	+31%	1996	1999
St Albert, Alberta	-38%	+51%	1995	2000
Peel, Ontario	-4%	+12%	2002	2003

Impact of City of Stratford Bag Differential Fee

The City of Stratford introduced differential fees for garbage in 1997. Bags picked up at the curb cost $1.20 each whereas bags hauled to the landfill were charged $0.50 each. This pricing structure lead to a dramatic drop in bags left at the curb and a dramatic increase in bags dropped off at the landfill which was cheaper. The amount charged per bag at the landfill is now $1.65 compared to $1.75 for curbside collection. The increase in the landfill drop off price to be similar to the curbside price has dramatically reduced drop-off at the landfill as shown in Figure 8.

Figure 8: Amount of Residential Waste Self Hauled to Stratford Landfill, 1994 to 2004

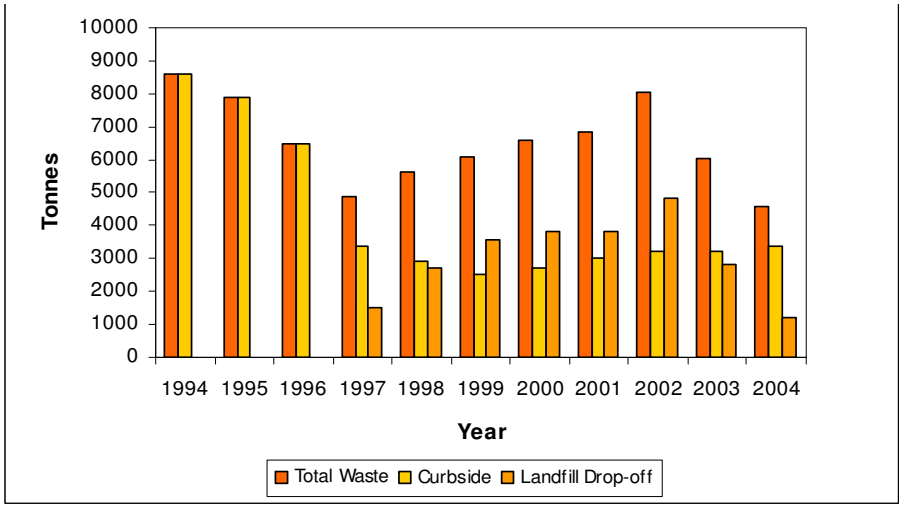


Figure taken from the report "**Optimizing the City of Stratford's Blue Box Program**" prepared by 2cg for Stewardship Ontario in April 2007

The experience in Stratford clearly shows that the public respond very strongly to economic incentives. When it was less expensive to take waste to the landfill, people trucked their waste to the landfill. When the landfill price went up sufficiently to be similar to the curbside pick-up cost, residents stopped using the landfill drop-off as much.

7.3 Impacts of Levies on Consumer Behaviour

Irish Plastic Bag Levy

The Irish Plastic Bag was introduced on 4th March, 2002 in an effort to reduce plastic bags in litter. It applies to grocery bags only. Plastic bags that contain meat, poultry, fish, loose vegetables, confectionary, hot or cold cooked food, ice, small plastic bags, and bags for items sold on board aircraft or ship are exempt from the levy.

Plastic bags designed for reuse are exempt from the levy if retailers charge at least 70 cent (0.7 Euro) ($1 Canadian) per bag. All retailers subject to the levy provide some reuse options at the till.

One of the key features of the plastic bag levy is that retailers are not allowed to absorb the cost. Retailers must charge the levy to each customer and can be prosecuted if they give out any bags

for free. The levy must be collected from the consumer and act as a public education tool; one if its secondary objectives is to get people to make more environmentally friendly choices and use reusable bags.

The levy immediately reduced the demand for plastic bags from 328 bags/cap in 2001 to 21 bags/cap (a 94% reduction) in 2003. After 3 years, consumption of plastic bags increased from 21 to 31 bags per capita in 2006, and had reached 33 bags/capita in early 2007. Even though this was still a 90% reduction from the 2002 baseline, the Irish government decided to increase the levy to stop the upward trend in plastic bag use. In July, 2007, the levy was increased to 22 Euro cent (35 cents Canadian). By November, 2007 the plastic bag consumption had dropped to 26 bags/capita.

Retailers do not object to the levy as they sell more bin liners and Bags for Life, and save on the costs of purchasing plastic bags which used to be given to customers free of charge.

In 2003, 91% of the Irish population thought the levy was a good idea as they could no longer see plastic bags on the street; they thought it was better for the environment and they thought reusable bags were more convenient for holding shopping. About 6% did not support the levy in 2003 as they found it frustrating when they forget to bring reusable bags to the grocery store, and they missed having plastic shopping bags around the house. When asked how they get their groceries home from the grocery store, 90% bring reusable bags, 6% use cardboard boxes, 1% other means, and 4% buy plastic bags.

In the Irish example, consumers quickly altered their behaviour to bring reusable bags when faced with a fairly high levy on plastic bags. The levy has very strong public support as it has resulted in significantly reduced wind-blown litter from plastic bags.

Some of the examples in this report illustrate a particular point but it may not be directly applicable to the hot drink cup issue. The Canadian Food and Restaurant Association (CFRA) have pointed out that single use hot drink cups cannot be compared to plastic bags in terms of consumer behavior. Unlike the a cup of coffee in a restaurant, if you forget your reusable shopping bag at home, you will either purchase your groceries and carry them out in your hands, or go home and get the bag to return later to the grocery store. This does not result in a lost sale or lost revenue for grocery retailers. Grocery store purchases are not driven by convenience – the customer will return to the grocery segment to buy the litre of milk. This is obviously not the case for a restaurant meal or cup of coffee. The industry is highly dependent on consumer disposable income (a 1% decrease in disposable income results in a 1% decrease in sales) and convenience. A cup of coffee foregone in a restaurant is most likely to be replaced by a cup of coffee in a person's home, or nothing. The single serve hot drink cup is an essential element of a restaurant operator's ability to deliver fast, convenient service to their customer, while meeting all food safety requirements. Without being able to offer all of these elements, the restaurant operator will see a sales decline[18].

Ikea's Voluntary Fee on Plastic Carryout Bags

On March 15, 2007, IKEA became the first major retailer in the United States to voluntarily stop offering a 'free' plastic bag to customers. Instead, customer are given a choice of purchasing a plastic carryout bag for 5 cents each (all proceeds in the first year would go towards American Forests to plant trees), or purchasing a 'big blue' reusable bag for 59 cents (down from 99 cents).[19] After IKEA introduced a similar program in the United Kingdom last year, IKEA's plastic carryout bag consumption dropped 95 percent.[20]

[18] Email communication Stephanie Jones CFRA to Maria Kelleher, Kelleher Environmental 1st April, 2009
[19] http://www.ikea.com/ms/en_US/about_ikea/social_environmental/environment.html, July 17, 2007
[20] http://www.sltrib.com/ci_6384558, July 17, 2007

A similar program was implemented across Canada in October, 2007, with revenues from the 5 cent charge donated to Tree Canada. IKEA estimated that they used 25 million plastic take-out bags in Canada annually. A year after the program began, more than 92 percent of IKEA's customers have stopped buying plastic bags.

7.5 Impacts of Container Deposits on Consumer Behaviour

Deposits on containers are a very effective economic instrument to get consumers to return drink containers to designated locations for a refund. Deposits on drink containers have been introduced over the years as a method to reduce litter and increase "away from home" recycling.

Ontario already has a deposit of 20 cents on bottles purchased at the Liquor Control Board of Ontario (LCBO). The Ontario Deposit Return Program was launched on February 5, 2007 by the Province of Ontario in partnership with the LCBO and The Beer Store. Under the program, almost all beverage alcohol containers purchased in Ontario can be returned to The Beer Store (or other select return locations) for a full deposit refund. This includes glass bottles, bag-in-box, Tetra Pak containers, plastic bottles (PET), and aluminum and steel containers on which deposits have been charged.

A front-end charge is paid by the consumer at the point of purchase and can be redeemed (full value) when the consumer returns the beverage alcohol container to a designated return location.

Results for the first year indicate an overall recovery rate of 67% which varies by material (69% for glass; 34% for PET; 29% for tetrapack/BIB for an overall recovery rate of 65%, and 74% for cans. As stated elsewhere in this report, recovery rate performance is related to a combination of convenience and the size of the economic incentive.

The Beer Store also charges deposits on beer containers, with a reported 97%[21] return rate on refillable beer containers.

Many US States have implemented deposit-return systems on soft drink, beer and other beverage containers. Currently eleven states (Oregon, Vermont, Michigan, Maine, Iowa, Connecticut, Massachussetts, Delaware, New York, California and Hawaii) have deposit systems on beverage containers with the deposit ranging from $0.05 to $0.10. The reported recovery rates range from 52% to 97%. Based on the Container Recycling Institute data, those US states with higher deposit systems (Michigan at $0.10) achieved the highest recovery rates at approximately 95% as well as the lowest percentage of beverage container litter. [22]

Based on a national average annual generation rate of 684 containers per capita, an estimated 191 containers are recovered per capita in non-deposit states compared to 490 containers per capita in the eleven deposit states in the US[23] indicating the clear impact of an economic incentive on consumer recycling behaviour. The BEAR report concluded that the average redemption rate in deposit systems was 78%, varying from a high of 95% in Michigan to a low of 72% in Massachussetts, in programs which targeted 79% of all container types. Overall recovery was 61.6% (422 containers per capita). About 30% of these redemptions occurred through reverse vending machines. Access to curbside programs varied from 76% in the deposit states to 61% in

[21] Responsible Stewardship; The Next Piece – 2007-2008" – The Beer Store
[22] Understanding Beverage Container Recycling: A Value Chain Assessment Prepared for the Multi-Stakeholder Recovery Project" . 2002. Prepared for Business and Environmentalists Allied for Recycling (BEAR) by R.W. Beck with Franklin Associates Ltd, the Tellus Institute and Sound Resource Management Group Inc, managed by Boisson and Associates
[23] Ibid

non-deposit states; the typical participation and capture rate was about 50%. Overall averaged data from the BEAR report is presented in Table 13.

Table 13: Comparison of Deposit Program Effectiveness (1999)

Recovery Program and Targeted States	Population in Recovered States (million)	Overall Recovery Rate	Normalized Per Capita Containers Recovered
Deposit States			
Traditional Deposit System (Manual)	47.4	43.1%	295
Traditional Deposit System (RVM)	47.4	18.5%	126
Weighted Average (9 traditional deposit states)	47.4	61.6%	422
CA Redemption System	33.9	54.5%	373
Curbside	81.6	9.5%	65
Residential Drop Off	81.6	1.6%	11
Other (non residential buy backs)	81.6	1.8%	13
Sub Total 10 Deposit States	**81.6**	**71.6%**	**490**
Non Deposit States			
Curbside	199.9	18.5%	127
Residential Drop off	199.9	4.5%	31
Other (Non residential and buy backs)	199.9	4.8%	33
Sub total non-deposit States	**199.9**	**27.9%**	**191**
Total US	**281.4**	**40.6%**	**277**

Table 14 presents available information on the performance of selected deposit systems in the US, and Tables 15 and 16 present data for Canada.

Table 14: Performance of Selected US Deposit Policies on Drink Container Redemption Rates and Litter Reduction

State	Date Implemented	Deposit	Redemption Rate	Beverage Container Litter Reduction	Total Litter Reduction
New York	1985	$0.05	74%	70-80%	30%
Oregon	1982	$0.05	80%	83%	47%
Vermont	1977	$0.05 - $0.10	80%	76%	35%
Maine	1980	$0.05	80%	69-77%	34-64%
Michigan	1979	$0.10	95%	84%	41%
Iowa	1980	$0.05	95%	76%	39%

Source: Container Recycling Institute

Information on recovery through deposit systems in Canada is summarized periodically in a report by CM Consulting. The most recent data is taken from a 2003 report. Table 15 summarizes the deposits charged and Table 16 summarizes recovery information for different container types. In provinces where liquor containers are managed by the same agency as non-alcohol containers

(AB, SK, NS, and NF) the recovery rates shown include alcohol containers. The data presented is for operating the year 2001-2002.

Table 15: Deposits Charged on Drink Containers in Canada 2001-2002

Province	BC	AB	SK	MB	ON	PQ	NB	NS	NF	PEI
Container Type										
Containers less than 1 Litre	5	5								
Containers greater than 1 Litre	20	20								
Containers under 450ml						5				
Containers greater than 450ml						20				
Non-alcohol							10	10	8	
Aluminum cans less than 1 Litre			10							
Aluminum cans greater than 1 Litre			20							
PET plastic bottles										
Refillable soft-drink and beer under 500ml										10
Refillable soft-drink and beer greater than 500ml										20
Glass Bottles 1-300ml			10							
Glass Bottles 301-999ml			20							
Glass Bottles greater than 1 Litre			40							
Steel/Bi-metal cans less than 1 Litre			10							
Steel/Bi-metal cans greater than 1 Litre			20							
Other plastic bottles less than 1 Litre			10							
Other plastic bottles greater than 1 Litre			20							
Juice box and Gable top			5							
Wine and Spirit Containers up to 500ml	10	10					10	10	20	10
Wine and Spirit Containers 501ml-1 Litre	10	10					20	20	20	20
Wine and Spirit Containers greater than 1 Litre	20	20					20	20	20	20
Beer Bottles less than 1 Litre	10	10	10	10	10		10	10	10	10
Beer Bottles greater than 1 Litre	20	20	40	20	20		20	20	20	20

Table 16: Recovery of Non-Refillable and Refillable Containers on Deposit in Canada 2001-2002

Province	BC	AB	SK	MB	ON	PQ	NB	NS	NF	PEI
Non-Refillables	79%	77%	81%	n/a	n/a	76%	74%	83%	67%	n/a
Refillable Beer Bottles	92%	95%	95%	100%	97%	98%	97%	98%	97%	98%

CM Consulting carried out a regression analysis of the size of the deposit vs the recovery rates and concluded that while the size of deposit increased recovery levels, other key factors were convenience and a strong promotion and education campaign. Recovery levels are low for some containers where consumers are not clear that a deposit can be redeemed. Also, recovery rates are lower for locations where redemption centres are not convenient[24].

Table 17 provides values for refund levels compared to recovery levels for container deposit programs across Canada.

[24] Personal communication Clarissa Morowski, CM Consulting, April 2009

Province	Refund Level/System			
	5-cent	*10-cent*	*10-cent (Refillable Beer)*	*20-cent*
BC	73.9	86.4	93.8	84.3
AB	74.7	89.0	95	84.1
SK	--	90.6	94.6	--
MB	--	76	99	--
ON	--	83	97	--
PQ	75.4	80.0	98	80.9
NB	74.5	--	97	--
NS	81.9	87.2	98	--
NFLD	67.9	--	97	--
PEI	--	--	97.9	--

Table 17: Refund Levels Compared to Deposit Values, Canadian Container Deposit

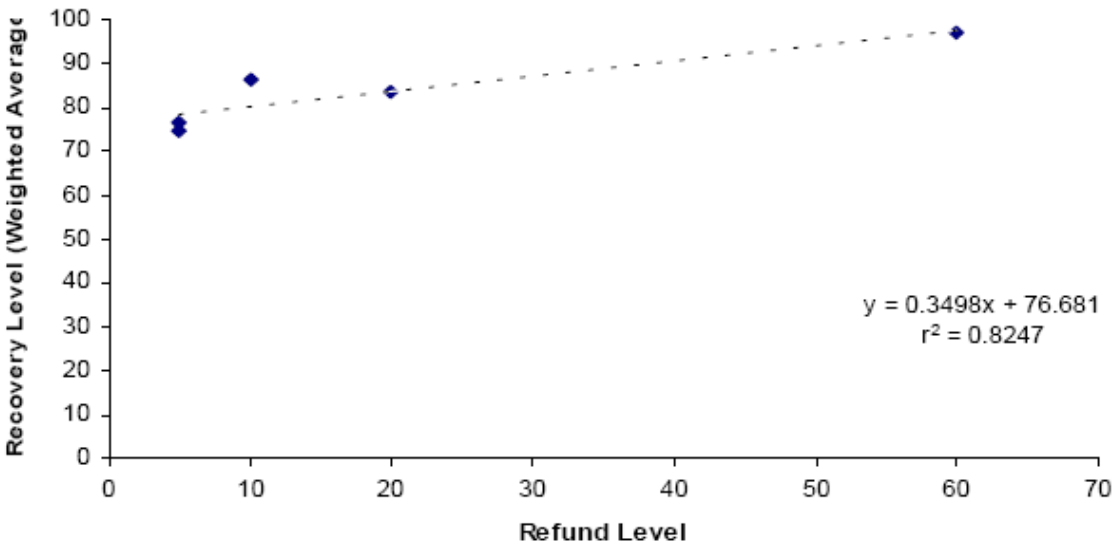


Figure 9: Regression Analysis of Recovery vs Deposit/Refund Levels for Canadian Programs

7.6 Other Incentives

Recyclebank

RecycleBank is for profit company based in Philadelphia, Pennyslvania. The company has developed a business concept that offers rewards to residential customers who participate in the recycling program. Single family households receive a wheeled, lidded 240 or 360 litre. RecycleBank cart that is specially outfitted with a radio frequency identification (RFID) tag registered to the home address. The recycling vehicle, retrofitted with on-board computerized scales, records the weight of the cart before and after being unloaded of its recyclables. The information is sent to a central location and processed on a home by home basis. Homeowners are provided credits in the form of coupons (RecycleBank dollars) based on the amount of recyclables collected. The technology is used with semi-automated trucks.

Households can earn up to $35 per month worth of coupons which are redeemable at participating stores. The average RecycleBank customer earns 2,400 points a year, which works out to about $15-20 month in rewards. Points accrue month-to-month and year-to-year without expiring unless subscribers drop the program or their account is inactive for more than six months. When customers log in to redeem their points, RecycleBank quantifies the customers recycling in terms of trees and gallons of oil (from plastics) saved.

The credits, called RecycleBank Dollars, can be used to pay for products and services from participating businesses, some of which include Starbucks, Target, Ikea, Coca-Cola, Home Depot and grocery stores such as Whole Foods Market. In 2009, RecycleBank established a partnership program with local and national charities and schools to allow customers to donate their RecycleBank dollars to a participating charity. In 2008, RecycleBank members donated 750,000 Points, the equivalent of $75,000 dollars, to local school environmental initiatives.

RecycleBank Dollars for Conley Ward's

In 2005, the City of Philadelphia was approached by RecycleBank to participate in a pilot program, free of charge. The first pilot was launched in 1,000 households in a neighbourhood that was already considered a high recycling achiever. Prior to the launch of the RecycleBank pilot, the City of Philadelphia switched from a multi-stream collection system to a single-stream collection system. The new single-stream system resulted in a jump in the recycling rate from 20.4% to 26.4% in the pilot neighbourhood. City staff report that the RecycleBank program increased recycling by one or two more percentage points. The collection route changed during the RecycleBank pilot program which made it difficult to compare the pilot results with previous impacts.

A pilot project was launched in 2006 involving 1,000 households in a neighbourhood characterized as having very poor recycling participation rates. The recycling rate increased from 5.3% to 8.2 % when the single-stream system was implemented and further increased to 13.2% recycling rate with the RecycleBank program.

City of Hamilton, Ontario - Gold Box Reward Program

The City of Hamilton's Waste Management Division launched the "Gold Box" Reward and Recognition Program in January 2007. The Gold Box program recognizes residents who reach and exceed the goal of 65% waste diversion from landfill.

Residents are encouraged to complete a ballot provided on the City's website. From the submitted ballots, City staff draw the name of one resident each month and perform an audit on their household waste, recyclables and source separated organics. All audited households that meet or exceed the community target of 65% waste diversion from landfill receive a reward. Participation is voluntary and the contest is only open to households within the City of Hamilton that receive curbside waste collection service.

Each winning household:

- is presented with a cheque for $100 to illustrate the savings that can be realized by diverting waste from landfill by recycling and composting. The cheque represents the approximate the value of taxes paid for waste management ($122 for 2007);
- is recognized in the local media;
- is recognized before City Council on an annual basis; and
- is given 'gold' boxes to use each week for recyclables collection (instead of using the standard blue box).

[26] http://eng.me.go.kr/docs/news/press_view.html?seq=86&page=28&mcode

City of London, United Kingdom – Cash Incentive Pilot Program

A cash based incentive program was implemented in a London community in 2001. In the pilot, recycling containers were equipped with bar codes that were scanned each time the resident placed them at the curb for recycling. Residents received a £10 cash incentive if they recycled at least half of the time over the six-month pilot. Participation increased from 35% to 41% in the monitored area and the tonnage of recyclables collected increased by 34%. Of all the households involved in the pilot, 22% qualified for the cash reward at the end of the pilot by having participated in the recycling program at least half of the time.

City of London, United Kingdom – Multiple Incentive Pilot

A Borough in the City of London implemented a multiple incentive pilot program which tried to encourage residents to increase their recycling rates by offering a combination of incentives including community rewards, prize draws and charitable donations. Four incentive approaches were used:

Recycler of the Year – an individual or organization could be nominated for the 'Recycler of the Year' award. The award was given to the individual who had made a great contribution to recycling by setting a good example and had encouraged others to recycle. A similar award went out to 'Recycling Estate of the Year' targeting housing estates in which tenants had made a great contribution to recycling themselves, and who had encouraged others to recycle. The three winning estates received £10,000 worth of environmental improvements. The finalists from these two categories were entered into the grand final with the winner receiving £500 plus £3,000 for a charity of their choice.

Make a Difference Funding – An existing funding program enabled each of the seven Area Assemblies in the Borough to receive £50,000 for community-based projects. These projects were nominated, voted for, and decided by local people and councillors. If the Borough-wide recycling participation rate rose from 55% in July 2005 to 60% by February 2006, then each Area Assembly would receive an additional £5,000 (a total of £35,000 extra).

Charity Recycling Fund – this incentive scheme provided financial rewards to local charities through a recycling charity fund that increased the more that residents recycled. The charities were chosen on the basis of their work in supporting people and the environment. An 18% target was set and if the target was reached, the recycling charity fund would raise £20,000 for the selected charities.

Draws and Grand Recycling Draws – During the pilot, residential addresses were chosen at random and checked to see if they were participating in the recycling program by setting out their recycling container on collection day. Those residents that set out a recycling container won £100. If they had not, their next-door neighbour's recycling container would be checked, and they would win the cash if they had recycled (and so on until winners were declared). Those residents receiving the £100 prizes were entered into the Grand Recycling Draws. Seven entries were chosen at random (one per Area Assembly) to win a further £500.

The package of incentive programs resulted in recycling rates increasing by 6% (compared with the year before) and participation rates increasing by 9%.

Sussex County, United Kingdom - Voucher Pilot Program

Pilots were conducted in eight communities to determine whether residents would increase their participation in recycling programs if rewarded with vouchers that could be redeemed at local shops. The pilots tested a number of factors including:

- the level of reward;
- varying the reward in relation to the recycling activity of householders;
- location and type of retailers where vouchers could be redeemed and
- rewarding the community based on overall performance.

Each pilot tested a different approach, for example in one pilot, residents that placed their recycling containers out for collection were given a voucher that could be redeemed at participating local shops or a second hand furniture store. In another pilot, the vouchers could only be redeemed at the second hand furniture store. Table 18 lists the different pilot programs and the change in participation rates experienced during the pilots.

Table 18: Sussex County, UK - Behaviour Change Response to Voucher Incentive Pilot Programs

Pilot	Participating Households	Voucher Reward Approach	Change in Participation Rates
1	1003	Awarded vouchers for recycling - £2.50 at Green House, 50p at local shops	58% pre-pilot to 61% pilot
2	969	Awarded voucher for recycling - £2.50 Furniture warehouse	54% pre-pilot and 54% pilot (no change)
3	574	Awarded voucher for recycling - £1.25 Shops	59% pre-pilot to 78% pilot
4	531	Awarded voucher for recycling - 75p plus extra 50p if placing out more than 1/3 container full	73% pre-pilot to 81% pilot
5	845	Awarded voucher for recycling - 50p Shops	46% pre-pilot to 54% pilot
6	719	Awarded voucher for recycling - £1 Shops	56% pre-pilot to 61% pilot
7	227	Awarded voucher for recycling - 25p , 75p or £1.25 depending on performance of all flats in a block, or householdShops	Not available
8	800	All households awarded voucher - 25p, 75p or £1.25 depending on level of recycling for all of the area based on weight of recyclables	Not available

One innovative pilot tested a variable reward program in which residents were given higher rewards for fuller recycling containers. Vouchers were colour coded according to the level of the reward:

- a recycling container less than one-third full received a red vouchers worth 25p (pence);
- a recycling container one-third to two-thirds full received an amber voucher worth 75p (pence);
- a recycling container greater than two-thirds full received a green voucher worth £1.25.

The results varied considerably from community to community. Residents had a clear preference for the vouchers that could be redeemed at different local shops compared to a voucher which could only be redeemed at one specific store. The results for the variable reward approach were inconclusive due to problems encountered with the distribution of the vouchers.
The study concluded that although the vouchers led to an initial increase in participation, by the end of most of the pilots recycling activity returned to baseline levels. The voucher system did not appear to sustain participation over time.

8. Policies and Incentives Targeting Hot Drink Cups

This section summarizes information available specifically related to altering behaviour regarding the use of hot drink cups.

8.1 International Policies Targeting Hot Drink Cups

Some international examples of policies targeting coffee cups are described in this section.

Voluntary Agreement With Coffee Shops and Fast Food Industry, South Korea

In South Korea, a voluntary agreement came into place in 2003 between the federal MOE and the fast food industry (applying to stores 2846 square feet or more) and coffee shops (1779 square feet or more). The number of companies signing on to the agreement was between 21 and 31 (different government reports quote different numbers of participating companies). The agreement required fast food stores and coffee shops to use reusable cups for products consumed in-store and charge a fee on take out disposable cups. The deposit was 100 won for fast food cups and 50 won for coffee shop cups[26]. The deposit was refunded when a cup was returned (1000 won is roughly equal to $1 CDN, so 100 won is about 10 cents Canadian). A 2005 MOE press release says the return rate for disposable cups was 30%[27]

Regulating disposable cup waste seems to have fallen into municipal hands. Some governments, such as Seoul city, are trying to require coffee shops to use reusable cups for in-store consumption though they can provide disposable cups without a deposit for take out products.

Taipei, Taiwan – Reusable Coffee/Hot Drink Cups on Premises, Charge for Off-Site Cups

In 2006 a ban was imposed on using disposable utensils in school cafeterias and government buildings (the ban applied to bowls, chopsticks, plates and spoons). The legislation requires that reusable coffee cups and chopsticks be used for in-store meals. Convenience stores are not allowed to offer free disposable eating utensils to customers.

Local Tax on Disposable Fast Food Packaging, Kassel, Germany

Kassel, Germany imposed a local tax of 0.5DM per disposable item on non-reusable dishes and cutlery used at special events, snack bars, restaurants, institutions and homes. The objective was to switch to washable tableware, or to recycle more. This policy was replicated in thirty other municipalities including Frankfurt and Dresden. It was challenged by McDonalds and was eliminated in 1998.

9.2 Programs To Increase Use of Refillable Hot Drink Cups

Use of refillable mugs for coffee and hot drinks results in source reduction of paper cups and PS lids. Most coffee/hot drink chains in Toronto provide a 10 cent discount if patrons purchase coffee in a refillable mug. Most stores also sell their own branded refillable mug and provide the first

[27] http://eng.me.go.kr/docs/news/press_view.html?seq=282&mcode=&page=9

coffee free of charge when the mug is purchased. Focus groups carried out as part of this study indicated that awareness of the refillable mug option was low among participants.

Members of the Hot Drink Committee who are in the coffee/hot drink business in Toronto were unable to provide figures on the number of hot drinks sold in refillable or ceramic mugs, compared to those sold in paper cups with PS lids.

Starbucks Research on Refillable Cup Usage and Incentives

The Starbucks Annual Corporate Responsibility Report (2007) provides data on Commuter Cup usage:

2007 – 1.1% of sales
2006 – 1.2% of sales
2005 – 1.3% of sales

Starbucks also provide an option to request a ceramic mug if it's a "for here" order for consumption at the restaurant.

Starbucks has carried out research on incentives to increase commuter cup usage in key US markets. When tested, consumers had stated that they would use refillable cups more if the financial incentive was higher than 10 cents. Field tests carried out in key markets found that increasing the discount beyond 10 cents did not have an impact on the Starbucks customer uptake of refillable or commuter mugs for coffee/hot drink purchases. However, when the discount was donated to local charities, it had a noticeable impact on consumer behaviour.

Conclusions from the research were:

- Starbucks customers were not driven by the amount of the discount;
- Starbucks customers were driven more by internal ethics or personal values/preferences.

Starbucks researchers concluded that the "do good" effect had the greatest impact on consumer behaviour and behaviour change.

Tufts University 17 Cent Refillable Coffee/Hot Drink Cup Economic Incentive Research

A pilot program was carried out at a Tufts University restaurant in 2008 to test the impacts of different pricing on use of refillable coffee/hot drink cups. The restaurant already had a 10 cent discount in place for using refillable mugs, which cost $1.50 each. The restaurant had a sink where consumers could rinse their refillable mugs, which added convenience. The pilot program ran for one month in 2008 to test how a direct economic incentive would impact on behaviour change. The test showed the 17 cent cost of a cup, sleeve and lid as a separate amount making up the price of the hot drink purchase. The pricing structure shown to customers is presented in Table 19.

Table 19: Pricing Structure for Hot Beverages in Tufts University Pilot, 2008

	12oz	16oz	20oz
Pre-Study Hot Beverage (HB) Price	**1.54**	**1.74**	**2.04**
Cost of Cup	0.15	0.17	0.20
Pre-Study Hot Beverage (HB) Price less cup cost	1.39	1.57	1.84
Restructured Hot Be0HB Price	1.39	1.57	1.84
Price of Cup	0.17	0.17	0.17
HB Price for Mug Bringer	**1.39**	**1.57**	**1.84**
Price of HB Buying a Cup	**1.56**	**1.74**	**2.01**

During the pilot period, the use of refillables increased from 3% if hot drinks sold to 8% of hot drinks sold.

University of British Columbia Hot Drink Cup Data

UBC (University of British Columbia) has a refillable discount of 25 cents which has been in place for many years. Refillable sales have been flat for some time at 15% of all sales. Consumer research carried out identified that only 10% of respondents knew about the discount. About 73% of respondents indicated that they would be willing to bring a mug if the discount were sufficiently high. No specific value was identified as being at a level where most respondents would consider using a refillable mug.

Environment Canada's Green Team Waste Working Group Initiative: Lug-A-Mug Campaign At Environment Canada Office Buildings in Ottawa, 2004-2005[28]

Early in 2004, Environment Canada's Green Team Waste Working Group decided to focus on reducing the use of polystyrene coffee cups from Environment Canada operations. Polystyrene had previously been recycled, but it has been removed from the recycling stream within the National Capital Region (NCR).

Environment Canada's Green Team Waste Working Group used most of the methods profiled in earlier sections of this report (education, awareness raising, constant reinforcement and reminders, pledges, donations to charity, etc) to bring about significant behaviour change. By the end of the program, self reported usage of PS cups dropped from 0.8 to 0.18 cups/capita/day.

The Waste Working Group surveyed employees purchasing coffee from building vendors, communicated the results, and encouraged the use of reusable mugs. The first osurvey conducted in the spring of 2004 found that 15% of staff used reusable mugs at the Terrasses de la Chaudiére (TLC) and Place Vincent Massey (PVM) locations. Most of the restaurant owners approached already offered a discount and were willing to put up posters provided by the Green Team, encouraging the use of refillable mugs.

[28] Greening Government – Human Resources – Success Stories (www.greeninggovernment.gc.ca)

Results of the first survey were profiled on the National Capital Region (NCR) Infolane interoffice website. Posters promoting reusable mugs to reduce waste and save money, were placed in elevator corridors and around recycling stations at TLC, PVM and La Salle office buildings.

During Waste Reduction Week in October, 2004, a polystyrene sculpture was assembled in the lobby of one Ottawa office building with polystyrene cups recovered from one day's garbage. Senior management toured TLC and PVM cafeterias and gave out 30 reusable cloth bags to Environment Canada employees using reusable mugs to purchase coffee.

The inconvenience of toting a reusable mug was identified as the major barrier to higher usage through a short employee survey. This finding is consistent with the feedback received at focus groups held in March, 2009 as part of the Hot Drink project.

The Green Team hosted Waste Free Day on June 2nd 2005 (in conjunction with Indian and Northern Affairs Canada (INAC) and the One-Tonne Challenge). Data on sales of disposable cups vs. reusable mugs at the PVM and TLC cafeterias indicated that reusable cups made up 25% of sales.

For education and promotion of the waste free day, posters went up on each floor of TLC, PVM and Cremazie. An email went out to all staff in INAC two days before and the day of the event at Environment Canada. Personal emails were sent from Green Team representatives to their staff groups. All volunteers for the event received an information package with background information on the environmental impacts of polystyrene to help answer questions from staff. There also was educational material available at the booths.

A total of 1,435 employees signed a pledge to stop using disposable polystyrene cups at work, and instead to use the travel mug provided. A total of $400 was raised for the Government of Canada Workplace Charitable Campaign during the mug give away by giving people to option to donate when they received their mug . An audit was done in the PVM and TLC cafeterias and found that mug usage increase to 39% after both the Lug a Mug posters and waste free day.

The most common reason staff gave for not using their mug all the time was that they left it in the office and did not have it for their first coffee of the day (44%). Other reasons include forgetting the mug (18%), having a dirty mug (13%), leaving it at home or in the car (8%), or feeling it is too inconvenient to use (5%). Again, all of these findings are consistent with comments made by focus group participants in March, 2009.

The data gathered during the survey showed that there was a 10% increase in mug use after the Green Team put up posters encouraging employees to use their own mug and a 14% increase in mug use after giving out mugs and pledge forms to employees.

Reach for the Top of the Tower Hot Drink Cup Recovery Contest, Brock University[29]

The *Reach for the Top of the Tower* contest started in Brock University in St Catherines, Ontario in November, 2008, after an employee was disappointed at the cancellation of the coffee cup composting program had taken cups from three Tim Hortons and three Starbucks outlets on campus (due to contamination with paper lids), and started a recovery program in its place. The contest encouraged students and faculty to collect their cups to see how high they could stack

[29] St Catherines Standard, January 26th, 2009

them. The goal was for teams from different departments to reach the 51-metre height of the Schmon Tower (6,012 cups).

The Finance and Administration Department were the first winner 35 days into the contest. The competition became so fierce, departments have to keep close tabs on their cups because they've been known to go missing. Any cups turned in for the contest now get ticked with a black marker, just to ensure everyone is playing fairly.

Aside from diverting the cups from the landfill, the contest organizer Lisa Wilson is hopeful that once participants see how they stack up, the endeavour will inspire them to drink coffee differently. "We started using refillable mugs right away," Wilson said about her Science Stores colleagues. "Once we saw what we collected in the first month, we were like, 'Oh my god.' Then some of us sat and calculated how much we spent."

8.3 Key Findings from March, 2009 Focus Groups on Hot Drink Cups

Three focus groups, each with ten attendees and lasting about 60 minutes, were held with Toronto residents and commuters on 5th March, 2009 to probe behavioural aspects of the use and disposal of hot drink cups.

Conclusions from the focus groups, which were facilitated by Ipsos Reid, were as follows[30]:

1. Many participants mentioned using single use disposable cups when they wree on the o and did not have the time to make their own beverage:
2. The primary barrier highlighted by participants to using reusable beverage containers centred around convenience;
3. Many participants mentioned putting their used single use disposable cups (including both the lid and the cup) in containers marked for recycling, however they were generally unaware that these cups could not actually be recycled in the City of Toronto system;
4. Participants had mixed opinions about separating the lid from the cup when disposing and/or recycling their used cup.
    a. Barriers to adopting this behaviour centred around convenience, namely a lack of time and a lack of facilities
    b. Motivations for adopting this behaviour centred around helping the environment, making a difference and taking one small extra step to help reduce waste;
5. On an unaided basis, many participants felt that offering an incentive would entice them to use reusable cups more often. Many felt that this discount would have to be at least 25 cents in order to motivate them to use reusable containers more often;
6. On an aided basis, many participants had positive reactions to the proposal to offer consumers a 20 cent discount if they used a reusable cup, primarily because this would save them money in the long run;
7. Others opposed the proposal of a 20 or 25 cent discount, because the proposed discount was not enough of an incentive for them to use a reusable cup or because the cost of coffee could increase as a result;
8. Environmental or waste reduction benefits were seen as secondary to the monetary benefit, therefore the larger the discount offered, the more likely participants felt they would be to use a reusable cup more often;
9. Ultimately, participants had very mixed feelings about the proposal to offer a 20 cent discount on refillable mugs to motivate them to use reusable cps more often, as a replacement for single use disposable cups, and

[30] Disposable/Single Use/Reusable Cups – Qualitative Research, March 2009. Report to City of Toronto By Ipsos Reid

10. The inconvenience of using reusable cups, primarily when consumers were purchasing coffee “on the go” was highlighted as the main barrier. Others felt that they needed more of an incentive, or a larger discount, to change their behaviour.

9. Conclusions, Recommendations and Next Steps

This report has described a number of methods which can be used to bring about behaviour change. It is not known at this time what exact behaviour change will be required regarding coffee/hot drink cup recycling, but in generic terms a number of conclusions can be drawn from other programs and the unique characteristics of hot drink consumption. These can be applied to the hot drink cup issue when the exact behaviour change required (reuse and recycling specifics) is known. However, considerable market research will be required at that time to develop and test appropriate social marketing campaigns to being about the required behaviour.

Behaviour change requires an extended period of time and consistent promotion and education campaigns constantly reinforcing the messages which resonate with the Toronto audience and commuters to Toronto who currently purchase coffee and hot drinks in take-away containers. The current successes in recycling behaviour have occurred over many years and have been a combination of creation of social norms along with consistent messaging and very convenient recycling systems, generally home based. Coffee/hot drink cup recycling would occur mostly "away from home" and convenience will be a key part of its success.

Even the most successful recycling programs only capture a portion of the material discarded. Participation is never 100% and capture is always less than 100%, therefore overall recovery by material of 80% is extremely difficult to achieve, even after voluntary programs have been in place for many years.

Economic incentives are very successful at altering consumer behaviour more quickly than voluntary programs alone. We do not have sufficient information at this time to know the extent to which a 20 cent or 25 cent discount will alter behaviour and increase the use of refillable mugs by hot drink consumers in the City of Toronto. There is currently a discount of 10 cents in place at most coffee/hot drink chains if a refillable mug is used. This discount appears to be not widely known, and hot drink vendors were not able to provide data on the current uptake rate. Starbucks report the rate at about 1.2% across North America.

A baseline of existing uptake of the 10 cent levy should be measured, and an extensive promotion and education campaign should be implemented by hot drink vendors to test the maximum practical limit of refillable mug uptake at this discount level. Market tests of higher discounts (20 cents and 25 cents) should be undertaken with careful monitoring to measure the impact. Market tests should also include the option to donate the discount to a local charity – this approach was successful at altering behaviour when tested by Starbucks in key markets.

The City should lead by example by instituting a mandatory refillable cup discount of 10 cents at all food service operations within their own buildings. Reporting on the number of drinks sold in refillable containers at all City funded food service operations should be instituted immediately. Over time, locations at City facilities should be used to test various levies for their effectiveness in increasing the use of refillable cups.

The City should also require their own food vendors to provide the option of a ceramic mug for in-house hot drink consumption. Starbucks provides this option as a corporate policy at all of its outlets.

Appendix A

Background to December, 2008 Council Decision Regarding Hot Drink Cups

October, 2008 Staff Report

Proposed Measures to Reduce In-Store Packaging Waste and Litter, Municipal Hazardous and Special Waste and Plastic Water Bottles

Public Works and Infrastructure Committee - Meeting 20

PW20.1

Proposed Measures to Reduce In-Store Packaging Waste and Litter, Municipal Hazardous and Special Waste and Plastic Water Bottles

City Council Decision

City Council on December 1, 2 and 3, 2008, adopted the following motions:

Plastic Bags

1. Council endorse the goal of a 70% reduction in the provision of plastic retail shopping bags, from a baseline of 2006 usage, to customers by the retail sector in the City of Toronto by 2012.

2. Commencing June 1, 2009, the City of Toronto:

a. require all retailers to accept the use of a reusable bag or container (as defined in Appendix A) for the transport of purchased items in lieu of plastic retail shopping bags;

b. require all retailers that offer or provide to customers plastic retail shopping bags (as defined in Appendix A) in a retail store in the City of Toronto to charge a minimum of $0.05 for each plastic retail shopping bag requested, or taken, by the customer, or provide other alternatives at no charge to the customer; and

c. require all retailers who offer or provide plastic retail shopping bags to communicate the charge described in (a) to customers by:
i. prominent signage at the point of sale; and
ii. itemizing the charge on the transaction receipt (if one is issued).

3. Commencing June 1, 2010, the City of Toronto ban the sale or distribution of plastic retail shopping bags that are not compatible with the City of Toronto's recycling program (as described in Appendix A), including biodegradable or compostable plastic bags (as defined in Appendix A) and bags with metal grommets or other non-plastic fittings.

4. The General Manager of Solid Waste Management Services be directed to report annually to the Public Works and Infrastructure Committee on the source reduction of plastic retail shopping bags used by customers, using all available information, including relevant data voluntarily provided by the appropriate industry associations to the General Manager, and any recommended changes to the minimum amount charged by retailers for plastic retail shopping bags, to ensure progress towards the goal of 70%

reduction in the use of plastic retail shopping bags by customers.

5. The General Manager of Solid Waste Management Services continue to consult with multiple stakeholders reflecting the types and sizes of businesses in the retail industry through the implementation of these recommendations.

6. If there are new funds generated from the sale of plastic retail shopping bags, the City supports the retailer reinvesting these funds in community or environmental initiatives, or utilizing them to mark down the selling price of re-usable bags. In addition, retailers be encouraged to identify where these funds are being re-invested for the awareness of the public.

7. The General Manager, Solid Waste Management Services, ensure that there is a reasonable consultative process with respect to plastic bags and plastic take-out food containers for the "mom and pop" shops who do not belong to an association.

8. In the event that the program fails to achieve the 70% reduction, as it relates to plastic bags, or appears to be failing to meet its goals, the General Manager of Solid Waste Management Services be authorized to recommend alternatives, including but not limited to a ban on plastic bags.

Plastic Take Out Food Containers:

9. The City of Toronto request food service retail representatives, food service trade associations and/or other food service stakeholders who currently use plastic take out food containers and operate in the City, to develop, by December 31, 2010, a reusable and/or refillable take out food container, or take out food service protocol that does not conflict with any regulation under the Health Protection and Promotion Act, which will allow customers to choose a reusable option for take-out food packaging.

10. The General Manager of Solid Waste Management Services be requested to report back to Council by January 1, 2011, on the progress of Part 9, above, and on the use of bans and/or financial tools on plastic take out food containers that may be appropriate at that time, the report to also include information as it pertains to food safety and crosscontamination risk of using customer supplied refillable containers

11. The City of Toronto ban the sale or distribution of plastic take-out food containers (as defined in Appendix C) that are not compatible with the City of Toronto Blue Bin program by February 28, 2011.

12. The General Manager of Solid Waste Management Services work with industry stakeholders to achieve a goal of having 50% of plastic takeout food containers used in Toronto, from a baseline of 2008 usage, compatible with the City of Toronto Blue Bin program by December 31, 2009.

13. The General Manager of Solid Waste Management Services be requested to report back to Council if the interim target of 50% compatibly is not achieved by December 31, 2009.

14. The General Manager of Solid Waste Management Services continue to consult with multiple stakeholders reflecting the types and sizes of businesses in the retail industry through the implementation of these recommendations.

15. The General Manager, Solid Waste Management Services, ensure that there is a reasonable consultative process with respect to plastic bags and plastic take-out food containers for the "mom and pop" shops who do not belong to an association.

Other Materials:

16. The General Manager of Solid Waste Management Services be authorized to report back with recommendations on additional in store packaging materials to be considered for similar packaging reduction policies.

Bottled Water:

17. The City of Toronto:

a. prohibit the sale or distribution of bottled water at Civic Centres immediately, with due regard for any current contracts related to the purchase or sale of bottled water;

b. authorize and direct appropriate staff from Solid Waste Management Services, Parks, Forestry and Recreation, Facilities and Real Estate, Purchasing and Materials Management, Toronto Public Health, Toronto Water and the bottled water industry, to work together to develop and implement a program that prohibits the sale and distribution of bottled water at all remaining City facilities by December 31, 2011; and

c. authorize appropriate staff to prohibit plastic water bottle sales at each City facility upon completion of improved access to tap water at all City facilities as water bottled sales are phased out, having due regard to existing contracts and unique public health and safety related situations and authorized special events in City facilities, by December 31, 2011.

Packaging Reduction Working Group:

18. The In-Store Packaging Working Group be reconstituted as a Packaging Reduction Working Group with two primary roles:
a. explore the options available to the City to reduce factory packaging

(i.e., packaging applied at the point of manufacture or distribution) and report on the options explored to the Public Works and Infrastructure Committee; and

b. explore the options available for a program where customers could remove factory packaging at the point of purchase and leave the packaging at the retail location, and that the Working Group report back to Council on the feasibility of such a program.

19. Membership of the Packaging Reduction Working Group be modified to include factory packaging and retail representatives.

Batteries, Paint Cans and Light Bulbs:

20. Savings which accrue to the City of Toronto as a result of the Waste Diversion Ontario funding of Municipal Hazardous and Special Waste be reinvested in enhanced recovery programs for those materials such as regular scheduled collection days for apartments and increased Toxic Taxis for single family residences and options for a waste diversion collection plan for batteries (e.g. - household batteries) and all light bulbs (including compact Fluorescent Light Bulbs) with a request that the General Manager of Solid Waste Management Services submit a report to the April 8, 2009 meeting of the Public Works and Infrastructure Committee.

General

21. The City Solicitor be directed to submit the necessary bills to Council to implement the above motions adopted by City Council.

22. City Council receive, for information, the confidential attachment to the report dated October 31, 2008, from the City Solicitor (Item PW20.1a), and maintain the information in the attachment as confidential pursuant to solicitor client privilege.

23. The City Clerk be directed to circulate the Council Resolution and amended staff report to the Federation of Canadian Municipalities, the Association of Municipalities of Ontario and the Regional Public Works Commissioners of Ontario.

Confidential Attachment 1 to the report (October 31, 2008) from the City Solicitor (PW20.1a), remains confidential in its entirety, in accordance with the provisions of the City of Toronto Act, 2006, as it contains advice that is subject to solicitor-client privilege.

Confidential Attachment - The receiving of advice that is subject to solicitor-client Privilege

Background Information (Committee)

2008-11-12-PW20.1-Staff Report
(http://www.toronto.ca/legdocs/mmis/2008/pw/bgrd/backgroundfile-17097.pdf)
2008-11-12-PW20.1-Appendix A - Plastic Bags
(http://www.toronto.ca/legdocs/mmis/2008/pw/bgrd/backgroundfile-17098.pdf)
2008-11-12-PW20.1-Appendix B - Hot Drink Cups
(http://www.toronto.ca/legdocs/mmis/2008/pw/bgrd/backgroundfile-17099.pdf)
2008-11-12-PW20.1-Appendix C- Plastic Take-out Food Containers
(http://www.toronto.ca/legdocs/mmis/2008/pw/bgrd/backgroundfile-17100.pdf)
2008-11-12-PW20.1-Appendix D - Other Policy Options Explored
(http://www.toronto.ca/legdocs/mmis/2008/pw/bgrd/backgroundfile-17101.pdf)

Background Information (City Council)

Presentation material submitted by the General Manager, Solid Waste Management Services, on In-Store Packaging (PW20.1c)
(http://www.toronto.ca/legdocs/mmis/2008/cc/bgrd/backgroundfile-17619.pdf)

Communications (Committee)

(October 28, 2008) letter from Heather C. Ducharme, Chair, Toronto 3Rs Working Group and
Elaine LePage, Vice-Chair, Toronto 3Rs Working Group (PW.Main.PW20.1.1)
(November 3, 2008) letter from Joe Cressy, Polaris Institute, and submitting a press release,
headed "City of Toronto to Ban Bottled Water" (PW.Main.PW20.1.2)
(October 16, 2008) letter from Joseph P. Hruska, Environment and Plastics Industry Council,
Municipal Relations (PW.Main.PW20.1.3)
(November 5, 2008) e-mail from Haley Waxberg, Knit-O-Matic (PW.New.PW20.1.4)
(November 5, 2008) e-mail from Jim Reynolds (PW.New.PW20.1.5)
(November 6, 2008) e-mail from Julie Graham (PW.New.PW20.1.6)
(November 7, 2008) e-mail from Harriet Simand and the Grade 6 Students, The York School,
forwarding a Press Release dated November 6, 2008 (PW.New.PW20.1.7)
(November 7, 2008) e-mail from Claire Kerr and Zsolt Juhasz (PW.New.PW20.1.8)
(November 9, 2008) e-mail from Christopher Hafey (PW.New.PW20.1.9)
(November 7, 2008) letter from David K. Wong, Corporate Counsel, EPI Environmental Technologies Inc. (PW.New.PW20.1.10)
(November 10, 2008) letter from Jim Goetz, Vice President - Provincial Affairs, Food & Consumer Products of Canada (PW.New.PW20.1.11)
(November 10, 2008) letter from Mike Clark, Vice President - Ontario, Coca-Cola Bottling
Company (PW.New.PW20.1.12)
(November 10, 2008) letter from Justin Sherwood, President, Refreshment Canada (PW.New.PW20.1.13)
(November 7, 2008) letter from Representatives of the Canadian Council of Grocery

Distributors (PW.New.PW20.1.14)
(November 10, 2008) e-mail from Stephan Borau (PW.New.PW20.1.15)
(November 11, 2008) e-mail from E. Winmill (PW.New.PW20.1.16)
(November 12, 2008) submission from Nick Javor, Tim Hortons (PW.New.PW20.1.17)
(November 12, 2008) submission from Dr. F. H. Edgecombe, Environment and Plastics Industry Council (PW.New.PW20.1.18)
(November 11, 2008) submission from Franz Hartmann, Executive Director, The Toronto Environmental Alliance (PW.New.PW20.1.19)
(November 12, 2008) submission from Bruce H. McNichol, President & CEO, Amhil Enterprises (PW.New.PW20.1.20)
(November 12, 2008) submission from John Staines, National Sales Manager, PACTIV (PW.New.PW20.1.21)
(November 12, 2008) submission from Sam Alavy, President & CEO, Canadian Polystyrene
Recycling Alliance (PW.New.PW20.1.22)
(November 12, 2008) submission from Joesph P. Hruska, EPIC Municipal Relations, The Environment and Plastics Industry Council (PW.New.PW20.1.23)
(November 12, 2008) submission from John Challinor II, Director of Corporate Affairs, Nestle
Waters Canada (PW.New.PW20.1.24)
(November 12, 2008) submission from Tom Ethans, Executive Director of Take Pride Winnipeg (PW.New.PW20.1.25)
(November 12, 2008) submission from Sajjad Ebrahim, President and Owner of Par-Pak Ltd. (PW.New.PW20.1.26)
(November 12, 2008) submission from Elaine LePage, Vice-Chair, Toronto 3Rs Working Group (PW.New.PW20.1.27)
(November 12, 2008) e-mail from Julie Wang (PW.New.PW20.1.28)
(November 12, 2008) e-mail from Cory Morningstar, President, Council of Canadians, London
Chapter (PW.New.PW20.1.29)
(November 12, 2008) submission from Tom Wood, Year of Hope
Campaign (PW.New.PW20.1.30)
(November 12, 2008) submission from Gerald Cooper (PW.New.PW20.1.31)
(November 12, 2008) submission from Diane J. Brisebois, Retail Council of Canada, filed by
Rachel Kagan (PW.New.PW20.1.32)
(November 12, 2008) submission from Kim Mckinnon, Nick Jennery, President, and Dave
Wilkes, Senior Vice President, Canadian Council of Grocery
Distributors (PW.New.PW20.1.33)
(November 12, 2008) submission from Farrah Khan, Founder and Director, NaturoPack Sustainable Packaging Group (PW.New.PW20.1.34)
(November 12, 2008) submission from Michelle Saunders, Ontario Restaurant Hotel & Motel
Association (PW.New.PW20.1.35)

Communications (City Council)

(November 17, 2008) e-mail from Haley Waxberg, Knit-O-Matic (CC.Main.PW20.1.36)
(November 17, 2008) e-mail from Haley Waxberg, Knit-O-Matic (CC.Main.PW20.1.37)
(November 17, 2008) e-mail from Howard Waxberg (CC.Main.PW20.1.38)
(November 16, 2008) e-mail from Lianes Schwarz (CC.Main.PW20.1.39)

(November 13, 2008) e-mail from Richard Longley (CC.Main.PW20.1.40)
(November 14, 2008) letter from Garfield Mahood and Helen Kenney (CC.Main.PW20.1.41)
(November 21, 2008) e-mail from Ciddy Maclaren (CC.Main.PW20.1.42)
(November 24, 2008) e-mail from David K. Wong, Corporate Counsel, EPI Environmental
Technologies Inc. (CC.Main.PW20.1.43)
(November 28, 2008) letter from Justin Sherwood, President, Refreshments Canada (CC.New.PW20.1.44)

1a In-Store Packaging

Confidential Attachment - The receiving of advice that is subject to solicitor-client Privilege

Background Information (Committee)

2008-11-12-PW20.1a-Staff Report from City Solicitor
(http://www.toronto.ca/legdocs/mmis/2008/pw/bgrd/backgroundfile-17102.pdf)

1b Requesting a Ban of Water Bottle Sales on City Property

Background Information (Committee)

2008-11-12-PW20.1b-Letter from Executive Committee-EX26.39
(http://www.toronto.ca/legdocs/mmis/2008/pw/bgrd/backgroundfile-17334.pdf)
2008-11-12-PW20.1b-Attachment - EX26.39
(http://www.toronto.ca/legdocs/mmis/2008/pw/bgrd/backgroundfile-17335.pdf)

PW20.2 ACTION Adopted Ward: All

Amendments to Processing Fees Due to LCBO Deposit Return Program

City Council Decision

City Council on December 1, 2 and 3, 2008, adopted the following motions:
1. City Council approve the increase in 2008 fees for single stream recycling processing with Metro Municipal Recycling Services Inc. and Canada Fibers Ltd. as follows:
a. for single stream recycling processing with Metro Municipal Recycling Services

Inc. by $5.46 per tonne from the current fee of $64.91 to $70.37 per tonne retroactive to January 1, 2008; and

b. increase the single stream recycling processing fees with Canada Fibers Ltd. by $4.12 per tonne from the current fee of $68.90 to $73.02 per tonne retroactive to January 1, 2008.
2. City Council approve the increase in 2007 fees for single stream recycling processing with Metro Municipal Recycling Services Inc. and Canada Fibers Ltd. as follows:
a. the 2007 single stream recycling processing fee at Metro Municipal Recycling Services Inc. during the period of March 2007 to December 2007 be increased $5.46 per tonne from $63.95 to $69.41 per tonne with retroactive compensation for a total of $450,990.54; and
b. the 2007 single stream recycling processing fee at Canada Fibers Ltd. during the period of March 2007 to December 2007 be increased $4.12 per tonne from $67.59 to $71.71 per tonne with retroactive compensation for a total of $248,720.28.
3. City Council authorize the General Manager, Solid Waste Management Services, to enter into any necessary amending agreements with both Metro Municipal Recycling Services Inc. and Canada Fibers Ltd., on terms and conditions satisfactory to the General Manager, Solid Waste Management Services, to reflect Parts 1 and 2, and in a form satisfactory to the City Solicitor.
4. City Council direct the General Manager of Solid Waste Management Services to request that the Ontario Minister of the Environment take immediate steps to reinstate the LCBO as a Waste Diversion Ontario Blue Box Plan steward for all wine and spirit containers captured and processed through municipal blue box waste recycling systems.

Background Information (Committee)

2008-11-12-PW20.2-Staff Report
(http://www.toronto.ca/legdocs/mmis/2008/pw/bgrd/backgroundfile-17103.pdf)

Appendix B

Proposed Measures to Reduce In-Store Packaging, Waste and Litter, Municipal Hazardous and Special Waste and Plastic Water Bottles

Date: October 29, 2008

To: Public Works and Infrastructure Committee

From: General Manager, Solid Waste Management Services

Proposed Measures to Reduce In-Store Packaging Waste and Litter, Municipal Hazardous and Special Waste and Plastic Water Bottles

Date: October 29, 2008
To: Public Works and Infrastructure Committee
From: General Manager, Solid Waste Management Services
Wards: All
Reference Number: p:/2008/swms/Nov. /019PW

SUMMARY

The City of Toronto has adopted the goal of diverting 70% of its waste from landfill and reducing the impact of litter on our local environment. As part of the Target 70 plan the City has taken a 3Rs approach to waste reduction and waste diversion. This report recommends incentives to reduce, reuse and ensure the recyclability of plastic retail shopping bags, hot drink cups and plastic take-out food containers. This report also measures to reduce or eliminate the use of plastic water bottles at City of Toronto facilities and recommends enhanced recovery programs for municipal hazardous and special waste.

RECOMMENDATIONS

The General Manager, Solid Waste Management Services recommends that:

Plastic Bags

1. Commencing June 1, 2009, the City of Toronto:
a. require all retailers that offer or provide to customers single-use plastic retail shopping bags (as defined in Appendix A) for the transport of purchased items at the point of sale in a retail store in the City to provide a minimum discount of $0.10 for each single-use plastic retail shopping bag not used by the customer;

b. require all retailers who offer or provide single-use plastic retail shopping bags to communicate the discount to customers by:
i. prominent signage at the point of sale; and
ii. itemizing the discount on the transaction receipt (if one is issued);
c. require all retailers to accept the use of a reusable bag or container (as defined in Appendix A) for the transport of purchased items in lieu of single-use plastic retail shopping bags; and
d. ban the sale or distribution of single-use plastic retail shopping bags that are not compatible with the City of Toronto's recycling program (as described in Appendix a), including biodegradable or compostable plastic bags (as defined in Appendix A) and bags with metal grommets or other non-plastic fittings.

Hot Drink Cups

2. Commencing June 1, 2009, the City of Toronto:

a. require all retailers who sell hot drinks in a single-use disposable Hot Drink Cup (as defined in Appendix B) to offer, and provide, a minimum discount of $0.20 off of the price of a hot-drink in a single-use disposable Hot Drink Cup, to every customer that purchases a hot-drink in a reusable or refillable cup (as defined in Appendix B);

b. require all retailers who sell hot beverages in single-use disposable cups to communicate the discount to consumers by:

i. prominent signage at the point of purchase; and/or
ii. itemizing the discount on the transaction receipt (if one is issued); and

c. require retailers who sell hot drinks in single-use disposable cups to sell the hot drink in an equivalent quantity by filling a reusable mug in lieu of single-use disposable cups.

3. The City of Toronto ban the sale or distribution of single-use hot drink cups (as defined in Appendix B) that are not compatible with the City of Toronto blue bin program (as described in Appendix B), by December 31, 2009.

Plastic Take-Out Food Containers:

4. The City of Toronto request food service retail representatives, foodservice trade associations and/or other foodservice stakeholders who currently use plastic take-out food containers and operate in the City, to develop, by December 31,

2010, a reusable and/or refillable take-out food container, or take-out food service protocol, which will allow customers to choose a reusable option for take-out food packaging.

5. The General Manager of Solid Waste Management Services be requested to report back to Council, by January 1, 2011, on the progress of Recommendation 4 and on the use of bans and/or financial tools on plastic takeout food containers that may be appropriate at that time.

6. The City of Toronto ban the sale or distribution of plastic take-out food containers (as defined in Appendix C) that are not compatible with the City of Toronto Blue Bin program (as described in Appendix C), by December 31, 2009.

Other Materials:

7. The General Manager of Solid Waste Management Services be authorized to report back with recommendations on additional in-store packaging materials to be considered for similar packaging reduction policies.

Bottled Water:

8. The City of Toronto:

a. ban the sale or distribution of bottled water at Civic Centres immediately, with due regard for any current contracts related to the purchase or sale of bottled water;
b. authorize and direct appropriate staff from Solid Waste Management Services, Parks, Forestry and Recreation, Facilities and Real Estate, Purchasing and Materials Management, Toronto Public Health and Toronto Water, to work together to develop and implement a program that bans the sale and distribution of bottled water at all remaining City facilities, improve accessibility to tap water at all City facilities and take into account existing contracts related to bottled water at City facilities and unique public health and safety related situations, and that this implementation be completed by December 31, 2011.

Packaging Reduction Working Group:
9. The In-Store Packaging Working Group be reconstituted as a Packaging Reduction Working Group with two primary roles:

a. explore the options available to the City to reduce factory packaging (i.e., packaging applied at the point of manufacture or distribution) and report on the options explored to the Public Works and Infrastructure Committee; and

b. explore the options available for a program where customers could remove factory packaging at the point of purchase and leave the packaging at the retail location, and that the Working Group report back to Council on the feasibility of such a program.

10. Membership of the Packaging Reduction Working Group be modified to include factory packaging and retail representatives.

Batteries, Paint Cans and Light Bulbs:
11. Savings which accrue to the City of Toronto as a result of the Waste Diversion Ontario funding of Municipal Hazardous and Special Waste be reinvested in enhanced recovery programs for those materials such as regular scheduled collection days for apartments and increased Toxic Taxis for single family residences.

12. The City Solicitor be directed to submit the necessary bills to Council to implement the above recommendations.

FINANCIAL IMPACT
The 2009 Recommended Operating Budget of Solid Waste Management Services includes $0.700 million in funding allocated for developing and implementing a communication and outreach program for this initiative in the Waste Diversion Cost Centre SW0703-Waste Diversion and Planning.

Any new by-law to be developed from this initiative would involve support from Municipal Licensing and Standards (MLS). In addition, the 2009 Recommended Operating Budget of Solid Waste Management Services includes funding for 15 staff including 12 dedicated enforcement officers that will undertake a wide range of duties associated with Target 70 initiatives including enforcement of this program. The funding for these staff resources is budgeted as follows: Cost Centres SW0619- Bylaw Enforce-Dist 3 & 4-Waste for $1.021 million and SW0712- Bylaw Enforcement-District 1&2-Recycle for $1.478 million. The resources required for the continued enforcement of this program will be reviewed again as part of the 2010 Operating Budget process.
The reduction of in-store packaging waste being managed by the City of Toronto will generate a cost savings, since the material will never enter the City's waste management system. Assuming, an annual reduction of 5,000 tonnes of in-store packaging waste would generate an estimated cost savings of at least $0.500 million per year.
The Acting Deputy City Manager and Chief Financial Officer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

Getting to 70% Solid Waste Diversion by 2010

At its meeting of June 19, 20 and 22, 2007, City Council adopted, as amended, the recommendations in Executive Committee report EX9.1 entitled "Proposed Initiatives and Financing Model to Get to 70% Solid Waste Diversion by 2010" (the "Target 70 Report").
The staff report and Council's decision can be viewed at (relevant from pages 2 to 10):
http://www.toronto.ca/legdocs/mmis/2007/cc/decisions/2007-06-19-cc10-dd.pdf
Amended Report EX9.1 included the motions that an In-store Packaging Waste Diversion Working Group be established and that the General Manager of Solid Waste Management Services report on the specific materials or classes of materials or products, specifically including batteries, light bulbs, paint cans, plastic bags and hot drink cups, that may be suitable for deposit-return or take-it-back programs
City Council, at its meeting of December 11, 12 and 13, 2007, amended Public Works and Infrastructure Committee Report PW11.13, entitled "Response to Council Motions – Getting to 70% Diversion by 2010" by adding motion 7, which states:
"The City Solicitor be requested to report to an upcoming meeting of the Public Works and Infrastructure Committee comprehensively on what powers the City has under the new City of Toronto Act to enact its own advanced disposal fees, levies or similar charges against packaging etc."
The staff report and Council's decision can be viewed at (relevant pages 110 and 111):
http://www.toronto.ca/legdocs/mmis/2007/cc/decisions/2007-12-11-cc15-dd.pdf

Recycling of Hot Drink Cups

At its meeting of October 31, 2007, the Public Works and Infrastructure Committee considered PW10.12, 2007 titled "Recycling of Hot Drink Cups" and requested that staff work with Tim Hortons to develop a pilot program, replicating full-scale operating

conditions, to examine the feasibility of adding hot drink cups to the City's recycling systems, including small commercial Yellow Bag customers, public space and public event recycling containers, Agencies, Boards, Commissions and Divisions, and residential single and multi-family homes; and that the General Manager, Solid Waste Management Services report back to the Public Works and Infrastructure Committee on this program as part of the report of the In-Store Packaging Waste Diversion Working Group in 2008

Proposed Measures to Reduce In-Store Packaging Waste and Litter, etc., 6

The staff report and the Public Works and Infrastructure Committee Decision can be viewed at (page 17):
http://www.toronto.ca/legdocs/mmis/2007/pw/decisions/2007-10-31-pw10-dd.pdf

Product Stewardship to Facilitate Waste Diversion

At its meeting of September 28, 29, 30, 2005, Council approved the establishment of an Informal Working Group comprised of Councillors Giambrone, Palacio and Balkissoon to discuss the issue of depot return systems. At its meeting of March 7, 2006 the Works Committee adopted recommendations from that Working Group that included:

(2) the Province of Ontario be requested to enact legislation to implement a comprehensive product stewardship system that requires industry to make payments to municipalities to cover the full cost of diverting the following materials: tires, oil, electronics, household hazardous waste, litter, Green Bin organics, mattresses, carpets and furniture;

(3) should the Province choose not to implement a full product stewardship system, the City be given the necessary powers under the new City of Toronto Act to require companies selling the aforementioned products in the City to pay an advanced disposal fee into a fund that is then used by the City to fund the full cost of operating programs that effectively divert these products from landfill;

Communication to Works Committee from Councillor Giambrone and Palacio can be viewed at:
http://www.toronto.ca/legdocs/2006/agendas/committees/wks/wks060503/it027.pdf

Recycling of Fluorescent Tubes and Other Light Bulbs Containing Hazardous Materials

At its meeting of September 25, 26 and 27, 2006 City Council adopted the following recommendations related to the recycling of fluorescent tubes and other light bulbs containing hazardous materials:

(1) City staff report back to Works Committee as to the status and effectiveness of the light bulb recycling programs in place at City facilities and facilities operated by Toronto agencies, boards and commissions;

(2) Solid Waste Management develop a corporate policy for the safe and efficient recycling of fluorescent light bulbs, metal halide light bulbs or other light bulbs that contain mercury or other potentially hazardous materials such as mercury and other gases;

Works Committee Report Number 6, Clause Number 4 can be viewed at:
http://www.toronto.ca/legdocs/2006/agendas/council/cc060925/wks6rpt/cl004.pdf

Plastic Water Bottles
At its meeting of December 11, 12 and 13, 2007, Council Referred the following motion to the Executive Committee:

"that the General Manager, Toronto Water, in consultation with the General Manager of Solid Waste Management Services, address the significantly growing impact of PET bottles on our recycling infrastructure and landfill capacities, by examining and reporting back on possible Blue Box alternatives, such as a deposit return system similar to ones already in place in many provinces."
Motion M183 can be viewed at:
http://www.toronto.ca/legdocs/mmis/2008/ex/comm/communicationfile-5125.pdf

COMMENTS

The City's waste management activities, programs and initiatives take into account the protection of human health, the environment and the conservation of natural resources. To this end, the City should promote, support and where appropriate, implement initiatives that reduce, reuse and recycle the City's waste, with the goal of reducing the amount of waste generated to the maximum extent practicable.
The in-store packaging target materials discussed in this report are all single-use disposable packaging materials. These materials (the "Target Materials") consist of:
(a) Hot Drink Cups (e.g., coffee cups and lids applied at quick-service coffee shops and chains)
(b) Plastic Retail Shopping Bags (e.g., grocery bags and other plastic singleuse carrier bags which are provided at the point of purchase for customer convenience to carry their purchase)
(c) Single-use plastic food packaging (e.g., take-out "clamshell" containers)
The Target Materials are unnecessarily contributing to depleting the capacity of the Green Lane landfill and make up a noticeable portion of litter on City streets. As directed by Council through the Target 70 report, staff is recommending ways that can effectively deal with the environmental issues that these Target Materials are creating and contribute to achieving 70% diversion.
Proposed Measures to Reduce In-Store Packaging Waste and Litter, etc., 8

Environmental Issues
Landfill Capacity
The Target Materials are primarily being managed in the waste stream through landfill disposal and therefore reducing or diverting these materials will extend the life of the Green Lane landfill.

The Green Lane landfill is permitted by the Ministry of the Environment to accept a total of 14.85 million cubic meters of non-hazardous solid waste and daily cover. At the current rate of diversion (42%) the City would fill Green Lane Landfill at a rate of 928,125 cubic meters per year.

The in-store packaging Target Materials discussed in this report are all single-use disposable packaging materials. Plastic retail shopping bags, hot drink cups and plastic take-out food containers are, currently and primarily being managed through landfill disposal, therefore reducing or diverting these materials will extend the life of the landfill.

Conclusions from Stewardship Ontario audit data (2005), presented to the In-Store Packaging Waste Diversion Working group, estimate an average of 8.8 plastic retail shopping bags generated, per household, per week in Toronto. This represents a total generation in Toronto of 457.6 million plastic retail shopping bags per year and, with each bag weighing 6 grams, 2745.6 tonnes per year, which is approximately 6,900 cubic meters of landfill capacity per year. Plastic bags do not degrade significantly over time and therefore this volume of plastic bags will persist if landfilled.

Hot Drink stakeholder representatives on the In-Store Packaging Working Group were not prepared to provide the working group with data related to the actual number of cups sold in Toronto because this was considered proprietary information. Staff estimates that 1 million hot drink cups are used in Toronto each day. Using the estimate of 365 million hot drink cups per year, we estimate the total generation of hot drink cups to be approximately 15,400 cubic meters of landfill capacity per year. While the paper component of most hot drink cups can degrade in landfill over time, unlike plastic bags and take-out food containers, this degradation does contribute to methane production. City waste audits show approximately 7.67 kg of polystyrene packaging (including protective packaging, plastic take-out food containers, hot drink lids, cups and pill bottles) per household per year. If we assume 30% of this total is polystyrene take-out food packaging we approximate 2,301 tonnes of plastic take-out food containers disposed per year. The generation of plastic take-out food containers represents approximately 21,500 cubic meters of landfill capacity per year. Polystyrene containers do not degrade over time in landfill.

Based on the above assumptions, the total generation rate of these materials together represents approximately, 12,300 tonnes and 43,800 cubic meters of landfill capacity per year. At our current rate of fill, this could represent up to 5% of Green Lane landfill usage per year. By displacing this volume of material the City could extend the life of the Green Lane landfill by approximately one year.
Furthermore, landfill capacity in Ontario remains scarce and establishing new landfills or waste processing sites is a long (i.e., 7 to 10 years) and expensive endeavour that can carry significant environmental impacts. Building new landfill capacity has potential Impacts on ground and surface water, as well as on the host community through increased traffic, noise and particulate matter in the air. To avoid environmental impacts, City should minimize the amount of waste generated and the amount of waste that must be managed.

Litter Reduction

Reduction of the use of the Target Materials will help to reduce litter. In aggregate, all categories of in-store packaging (e.g., cold drink cups, take-out trays, paper take-out food containers, napkins, utensils, etc.) represent approximately 26.5% of litter. Hot drink packaging in particular were also found to be the top contributor to hundreds of litter bins in an audit conducted by Parks and Recreation in 2006. The City spends $20 million per year on litter management which involves curbside collection of three stream litter bins, street and sidewalk vacuum collection (i.e., "Mad Vac") and bag-and-broom fly squads. In 2001 the City of Toronto set a goal of reducing litter by 50% over 5 years. Through education, enforcement and outreach the City managed to reduce the amount of on-theground
litter by 40% over 5 years (2002 – 2007) and has increased the number of public space litter and recycling bins. Further reduction of litter is necessary and can be achieved through a policy which supports the source reduction of single-use disposable items that end up as litter such as hot drink cups, plastic bags and take-out food containers.

Reducing the Target Materials

The environmental benefits of reducing the use and disposal of single-use disposable items are clear. Reducing the use and consumption of the Target Materials simply results in less waste to manage through recycling or disposal. A reduction in waste means less waste to collect, resulting in local environmental benefits such as fewer trucks on the road, less gas consumption and lower emissions. Less waste managed means less waste to process at MRFs, other recycling facilities and the City landfill, resulting in less energy used and less energy consumed in transportation of materials. It is more environmentally sound, and cost effective, to reduce the amount of waste that we produce than it is to recycle or dispose of it. Recycling and disposal both require the use of energy (e.g., to run the processing operations) and transportation (e.g., source collection and transfer to facilities) and carry the environmental and financial costs of energy use, greenhouse gas emissions and the need for more waste processing capacity. By simply reducing the

amount of waste results in the reduction of the City's overall environmental impact and contributes to the environmental well being of the City.

Torontonians have asked the City to address waste packaging. In public consultation sessions held in 2006 and 2007 on the City's approach to waste disposal, residents identified packaging waste as one of the key problems facing waste management in Toronto. During City-sponsored focus groups conducted by Ipsos Reid in May and October, many participants identified packaging as the primary problem associated with waste reduction. It is clear that Torontonians are concerned about their impact on the environment and, to the extent that citizens are given a choice affecting that impact, there is greater social and environmental benefit to the City of Toronto.

Key Principles when Developing In-Store Packaging Policy

Staff has identified five key principles for evaluating the various options for managing the Target Materials.

1. 3Rs hierarchy:
(a) Policies should first encourage source reduction of waste as well as provide reuse and recycling opportunities. Disposal of the target materials should be avoided.
2. Consistency with the goals of the Target 70 focused service model, which:
(a) minimizes the amount of waste generated to the maximum extent practicable;
(b) maximizes municipal efficiency of collection and processing of recyclables; and
(c) maintains WDO funding.
3. The policies should: not put Toronto businesses at a significant competitive disadvantage with those outside of the city; have a relatively low administrative or financial impact on retailers; and should not increase the baseline price of products.
4. The policies should provide residents with the tools and access to information to make environmentally responsible choices which result in the reduction of their waste when making their purchasing decisions.
5. Consumer health and safety should not be compromised when developing the City's approach because the Target Materials all have the potential to come in contact with food and beverage
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Recommended Policy for the Target Materials
After considering the City of Toronto Act and upon review of successful waste reduction programs in other jurisdictions, the availability of reusable alternatives to single-use disposables (e.g., reusable shopping bags and travel mugs), and existing waste reduction incentives already in use by some retailers (e.g., a charge-per-bag, discounts for reusable mugs) staff are recommending a policy that:
1. Contains a financial incentive that encourages consumers to make a choice having a positive environmental impact by reducing the use of single-use disposable packaging;
2. Provides the tools and information necessary for customers to make an educated choice with respect to the selection of reusable alternatives to single-use disposable packaging; and
3. Acknowledges that when single-use disposables must be used, they should be compatible with the City's waste diversion systems and not be managed through the residual waste stream.
Staff is proposing the following policy be applied to each of the Target Materials, as indicated below.

Plastic Retail Shopping Bags
(a) Reduction Strategy
The City of Toronto should require all retailers that offer or provide to customers singleuse
plastic retail shopping bags (as defined in Appendix A) for the transport of purchased

items at the point of sale in a retail store in the City to provide a minimum discount of $0.10 for each single-use plastic retail shopping bag not used by the customer;
Retailers who offer or provide single-use plastic retail shopping bags should also be required to communicate this available discount by prominent signage at the point of sale and/or itemized on the transaction receipt to inform customers of the choice they have (i.e., a single-use disposable bags vs. a reusable bag or "no bag").
In March 2002 the Irish government introduced a levy that resulted in a significant reduction in the demand for plastic bags. The levy charged 15 Euro cents ($0.24CAN) starting in 2002 and was raised to 22 Euro cents ($0.35CAN) in 2007. Irish authorities chose 15 Euro cents because it was considered sufficiently high to give most consumers "pause for thought".
Their statistics show a 94% reduction in the use of plastic bags (from 328 bags per capita to 21 bags per capita) in three years. The use of bags increased to 33 bags per capita in early 2007, prompting officials to raise the levy. By November 2007, the plastic bag consumption had dropped to 26 bags per capita.
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The successful reduction in the demand for plastic retail shopping bags in Ireland can be attributed to a levy on each plastic retail shopping bag. The Irish levy is a tax on each plastic bag with revenues going to the Irish government. A similar system is not possible under the current City of Toronto Act, which only permits a sales tax to be applied to alcohol, tobacco and admission on places of amusement. It is clear that source reduction is effected by a per-bag charge in Ireland and that some sort of financial tool should be utilized in Toronto to encourage source reduction of plastic bags.
Research suggests that a per-bag fee of $0.10 to $0.35 would significantly reduce the consumer use of retail plastic shopping bags. Public research in Australia concluded that people would be more likely to reduce the use of plastic retail shopping bags if there were a charge or fee implemented. For four weeks in the summer of 2008, some cities in the Australian state of Victoria, piloted the imposition of a 10 cent (Australian) levy on each plastic retail shopping bag. Preliminary results released by the State Environment and Climate Change Minister showed a 79% reduction in the use of plastic bags.
A tax or fee on plastic retail shopping bags is not feasible under the City of Toronto Act, but the waste reduction benefit of a financial incentive is apparent. Staff recommends a per-bag discount of $0.10 to effectively drive source reduction behaviour by providing a reasonable financial incentive to reduce plastic retail shopping bag use.

(b) Reuse Strategy

The City of Toronto should require all retailers to accept the use of a reusable bag or container (as defined in Appendix A) for the transport of purchased items in lieu of single-use plastic retail shopping bags.
Consumers can take advantage of the plastic retail shopping bag discount by bringing their own reusable bag to retail stores. In order to provide customers with the option of owning a reusable bag, many retailers are already offering reusable bags for sale. All retailers should be willing to accept the use of reusable bags and should ask customers if they want a plastic retail shopping bag or not.

Current City policies encourage the reuse of plastic retail shopping bags for lining Green Bin kitchen catchers and Solid Waste Management Services continues to support the reuse of plastic retail shopping bags. However, while the City encourages the reuse of plastic retail shopping bags, the City does not consider plastic retail shopping bags to be equivalent to a reusable shopping container.

(c) Recycle Strategy

The City of Toronto should ban the sale or distribution of single-use plastic retail shopping bags that are not compatible with the City of Toronto's recycling program (as described in Appendix A), including biodegradable or compostable plastic bags (as defined in Appendix A) and bags with metal grommets or other non-plastic fittings. Starting December 8, 2008, the City will begin accepting plastic retail shopping bags into the Blue Bin program. With the introduction of plastic retail shopping bags in the Blue

Bin, it is recommended that the City should also ban the sale or distribution of any plastic bag that is not compatible with the City's recycling program including biodegradable or compostable plastic bags and bags with metal grommets or non plastic fittings. These types of plastic bags interfere with the recycling of plastic bags and contaminate the endproducts
for recycled plastic bags. Because biodegradable plastic bags are visually indistinguishable from traditional plastic bags they should be banned from sale or distribution in Toronto to prevent the contamination of recyclable plastic bags. The contamination created by biodegradable and compostable plastic bags in the recycling process renders potentially recyclable plastic unusable and subsequently must be disposed of in landfill.

Our overall approach to plastic retail shopping bags follows the 3Rs hierarchy by providing residents with three environmentally beneficial choices: to reduce their plastic bags, reuse any bags they have (i.e., for Green Bin liners, pet waste, etc) or bring reusable bags when they shop, and to recycle any remaining plastic bags in the Blue Bin system. This approach expands on discount programs that many Toronto retailers are offering which provides a discount when reusable shopping bags are used. This approach maintains customer and resident convenience and will not compromise food safety.

Hot Drink Cups

(a) Reduce Strategy

City of Toronto should require all retailers who sell hot drinks in a single-use disposable Hot Drink Cup (as defined in Appendix B) to offer, and provide, a minimum discount of $0.20 off of the price of a hot-drink in a single-use disposable Hot Drink Cup, to every customer that purchases a hot-drink in a reusable or refillable cup (as defined in Appendix B).

Retailers who sell hot beverages and single-use disposable cups should also be required to communicate this available discount by prominent signage at the point of sale and/or

itemized on the transaction receipt to inform customers of the choice they have.
The current practice at some major hot drink chains provides customers with a financial incentive (i.e., a discount) to use a refillable mug. For example, Tim Hortons and Starbucks both offer a 10 cent discount on the price of a cup of coffee when a reusable mug is used. Some hot-drink retailers have no stated policy or indication that a discount is offered for reusable mugs. Staff research suggests that the current discount amount may be too small to motivate customers to use reusable mugs regularly and that the discount is often not well communicated. Based on staff research the wholesale cost of a hot drink cup, lid and insulating cardboard sleeve, can range from $0.13 to $0.27 depending on the size and composition of the cup. Staff recommends a discount of $0.20 to effectively drive the source reduction of single-use hot drink cups by providing a financial incentive for the consumer to make the environmental choice to reduce waste and choose reusable options. This amount is also representative of the cost of the packaging to the retailer.

(b) Reuse Strategy

The City of Toronto should require retailers who sell hot drinks in single-use disposable cups to sell the hot drink in an equivalent quantity by filling a reusable mug in lieu of single-use disposal cups.

All retailers selling hot drinks in single-use disposable cups should be required to provide the choice to the consumer of using a reusable mug (e.g., a reusable travel mug, a ceramic mug for use on the premises). Therefore all retailers that offer hot drinks in single-use hot drinks cups should be required to fill a customer's order in a reusable mug.

(c) Recycling Strategy

The City of Toronto should ban the sale or distribution of single-use hot drink cups (as defined in Appendix B) that are not compatible with the City of Toronto Blue Bin program by December 31, 2009.

Recycling of hot drink cups (specifically paper-based polycoat cups and the associated polystyrene lids) in Toronto's Blue Bin program is not currently possible. There are several key reasons, discussed in Appendix D of this report, as to why it is not feasible, at this time, to add these materials to the single stream recycling program.
In order to ensure that any single-use disposable hot drink cups used in Toronto are recyclable, it is recommended that Toronto ban the sale or distribution of single-use hot drink cups and lids that are not compatible with the City of Toronto Blue Bin program by December 31, 2009.

Our overall approach to single-use hot drink cups follows the 3Rs hierarchy by providing residents with environmentally beneficial choices: an incentive to reduce disposables and to use reusable or refillable cups. This approach expands on discount programs that many Toronto retailers are offering which provides a discount when reusable mugs are used and is not too onerous of an amount for retailers to bear. Our approach

acknowledges the current problem with recycling single-use hot drink cups and sets a goal and timeline for solving the problem.

Plastic Take-out Food Containers

(a) Reduce and Reuse Strategy

The City of Toronto should request food service retail representatives, foodservice trade associations and/or other foodservice stakeholders who currently use plastic take-out food containers and operate in the City, to develop, by December 31, 2010, a reusable and/or refillable take-out food container, or take-out food service protocol, which will allow customers to choose a reusable packaging option for take-out food packaging.

Unlike plastic bags and hot drink cups, there are currently no viable reusable alternatives to plastic take-out food containers that retailers are willing to fill at the point of purchase in lieu of disposable packaging. During consultation with food service retailers and brand owners, all cited health and safety concerns with respect to packaging food in

reusable containers, especially those brought in by customers, because the food service retailer would not be able to guarantee that the container is safe and sanitized. Food service retailers feel they would be liable for contamination as it would be impossible to determine whether the source of contamination existed prior to filling the customerbrought

reusable container.

Acknowledging this, Toronto should seek the development of a reusable take-out food container or foodservice protocol for reusable take-out food containers that will satisfy health and safety requirements and provide customers with a reusable option when ordering take-out food. The General Manager of Solid Waste Management Services will monitor the progress towards the development of a reusable take-out food container and will report back to Council by January 1, 2011.

(b) **Recycling Strategy**

In order to ensure that any plastic take-out food containers used in Toronto are recyclable, the City of Toronto should ban the sale or distribution of plastic take-out food containers (as defined in Appendix C) that are not compatible with the City of Toronto Blue Bin program by December 31, 2009.

Currently, many plastic take-out food containers are foam polystyrene “clamshells”. As of December 8, 2008 all foam polystyrene will be acceptable in the Blue Bin program. Some paper take-out food containers are also compatible with the City of Toronto Blue Bin program, however, non-foam, clear or coloured polystyrene or other plastic take-out food containers are not currently compatible with the Blue Bin program. Staff will continue to work with affected stakeholder representatives as well as MRF operators and material market representatives to find ways of including other types of plastic take-out food packaging in Toronto’s Blue Bin program in the future.

By-law and enforcement of policy on Target Materials

A by-law will be drafted following Council adoption of recommendations related to this

report. Solid Waste Management staff will work with appropriate staff from Municipal Licensing and Standards, Legal Services, Toronto Public Health and any other appropriate departments, to develop the text of the by-law which will include an enforcement protocol and recommended set fines for violation, in the range of $100.00 to $400.00 per offence.

Other Policy Option explored

In order to develop this recommended approach, staff examined a number of policies such as taxes, bans, and deposit return and take-it-back programs to deal with plastic retail shopping bags, hot drink cups and plastic take-out food containers. An overview of these policies can be found in Appendix D of this report.

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Factory Packaging – Leave at Retail

The In-Store Packaging Waste Diversion Working Group should be reconstituted as a Packaging Reduction Working Group with two primary roles:

(a) explore the options available to the City to reduce factory packaging (i.e., packaging applied at the point of manufacture or distribution) and report on the options explored to the Public Works and Infrastructure Committee; and

(b) explore the options available for a program where customers could remove factory packaging at the point of purchase and leave the packaging at the retail location, and that the Working Group report back to Council on the feasibility of such a program.

The In-Store Packaging Waste Diversion Working Group was initially formed to examine the range of mechanisms that would result in achieving the waste reduction targets of in-store packaging outlined in the Target 70 report. Over the course of the discussions there was a suggestion to implement a program where customers could remove factory packaging (i.e., packaging applied at the point of manufacture or production, as opposed to in-store packaging applied at the point of purchase) and leave the packaging at the retail location. At the time it was determined that the suggestion fell outside of the group's mandate (which focused on packaging applied at the point of purchase) and was not explored further.

The industry, retail and manufacturing stakeholders on the Packaging Reduction Working Group will work with the City of Toronto to develop a plan that will reduce factory packaging as well as additional options to provide consumers with the choice to remove factory packaging at the point of purchase and leave the packaging at the retail location.

Plastic Water Bottles

The City of Toronto should:

(a) Ban the sale or distribution of bottled water at Civic Centres immediately, with due regard for any current contracts related to the purchase or sale of bottled water; and

(b) authorize and direct appropriate staff from Solid Waste Management Services, Parks, Forestry and Recreation, Facilities and Real Estate, Purchasing and Materials Management, Toronto Public Health and Toronto Water, to work

together to develop and implement a program that bans the sale and distribution of bottled water at all remaining City facilities, improves accessibility to tap water at all City facilities and takes into account existing contracts related to bottled water at City facilities and unique public health and safety related situations, and that this implementation be completed by December 31, 2011.

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During the past several years, the quantity of plastic water bottles generated has increased significantly. The City of Toronto's drinking water is excellent quality and drinking water from fountains or taps is environmentally preferable to single-use bottles of water. Plastic water bottles require energy resources to produce and they end up in our recycling program, as litter, or in landfill. A policy with respect to water bottles should be consistent with the 3Rs approach and first focus on the reduction of plastic water bottle use. For the City locations that have adequate access to tap water, there should be no need to sell bottled water and it is recommended that the City ban the distribution and sale of bottled water at City facilities.

The City has various contracts related to the sale of bottled water at City facilities that would need to be considered before a ban on the sale of bottled water at City facilities could be instituted. The City is under contract with Pepsi until October 31, 2010 to supply beverage vending machines and beverages to concession operators at City facilities (e.g., arenas, community centres). The contract with Pepsi also requires that a minimum of 50% of product selection availability for sale through vending equipment in each outlet be in the form of healthy beverages including water, 100% juice and low fat milk products. This City requirement was based on a recommendation by Public Health related to healthier choices. The City also has contracts with different concession operators with various expiry dates (e.g., 2012, 2013, 2016 etc.). These contracts would likely have to be renegotiated as the initial bids by the concession operators would have been based on sales projections that included bottled water.

Drinking fountains are available at City's recreation facilities (arenas, community centres etc.) and in various parks across the City. Should there be a need to install additional drinking fountains, the cost is approximately $2,500.00 for an indoor fountain and $10,000.00 to $15,000.00 for an outdoor fountain. Annual maintenance costs are approximately $50.00 and $400.00 for an indoor fountain and outdoor fountain respectively.

The target date for a ban of December 31, 2011 has been set to provide the necessary time to ensure adequate access to tap water at all City facilities. A policy banning bottled water distribution by the City would also have to take into account unique situations where bottled water may be necessary, such as emergencies in the community (e.g., evacuation situations) and distribution by Toronto Public Health during Heat Health Alert System response protocols.

Batteries, Light Bulbs and Paint Cans

Effective July 1, 2008, brand owners and importers of municipal hazardous or special waste (MHSW) including paints and single-use, dry cell batteries are obligated to cover municipal costs for the recycling and/or proper disposal of these materials. Municipalities are responsible for the collection costs. In fall 2009, other MHSW materials including

compact fluorescent light bulbs (CFL's) and other batteries will be included. As well, in fall 2009, industry will be required to cover 100% of the cost of the entire program, including municipal collection costs.

With 100% funding, the City will have the necessary funds to significantly enhance its recovery program, making it much more convenient for the public. We expect that this will include regular scheduled collection days for apartments and increased Toxic Taxis for single-family residences. With the new funding in place, we also expect to see some stores set up return-to-retail options, similar to the Home Depot CFL recovery program.

The recovery of municipal hazardous or special waste materials through enhanced City recovery programs funded by Waste Diversion Ontario is the preferred recovery method for these materials. It is not practical to ban batteries, CFL's, or empty paint cans which are currently accepted in our Blue Bin program. Implementing a City deposit return program would disqualify the City from WDO funding.

Staff are currently planning a MHSW pilot to commence in late 2008 or early 2009 involving approximately 20 multi-unit buildings. A range of buildings will be selected to ensure a cross-section of different socio-economic categories. Each building will receive 3 MHSW collection days throughout the 8 month pilot where our staff will set up in their lobby or near the waste management collection area for a specified time period. Promotional material will be provided to the residents and building management in advance of their scheduled collection days.

Communications Plan

To effectively implement this report's recommendations a substantial investment in public education will be required. To effect necessary change, the public must be informed, embrace the change and actively engage in the required behaviour.

A proposed public education/promotion budget of approximately $700,000 has been identified as part of the 2009 recommended operating budget of Solid Waste Management Services. This plan will take into consideration the receptivity of the audience(s), the barriers to reaching these audiences, the specifics of what they are being asked to do, the tools they are provided, their underlying socio-economic characteristics, the consequences of non-compliance, etc. The communication tactics will potentially include research, advertising, website, media relations, displays and print materials, including translation of key materials.

Once Council makes its decision regarding staff's recommendation and provides direction, a targeted communications plan will be created.

Stakeholder Relations

In preparing this report, staff conducted numerous stakeholder consultations including:

(a) The In-Store Packaging Waste Diversion Working Group.

(b) The Packaging Waste Reduction Forum, held on September 10, 2008.

(c) Individual meetings with stakeholders.

(d) Site visits to other municipalities.

Staff consulted and commissioned research on policy options (including bans, taxes, and

deposit return programs) currently utilized, and proposed, for managing in-store packaging in the following jurisdictions:
Ireland
Australia
The City of Seattle
The City of Los Angeles
The City of Ann Arbor Michigan
The City of Oakland
The City of San Francisco
The City of Portland
Alberta
British Columbia

In-Store Packaging Working Group

The In-Store Packaging Waste Diversion Working Group was formed to explore a range of options available to the City to achieve the source reduction of "in-store packaging" as described in the Target 70 report. Solid Waste Management Staff identified the Target Materials to the In-Store Packaging Waste Diversion Working Group, as the initial materials for source reduction planning.
These Target Materials were identified because there are currently a variety of viable, reusable alternatives to single-use hot drink cups and plastic retail shopping bags, suggesting that these two items in particular can be targeted for source reduction. Additionally, all of these materials are applied at the point of purchase within Toronto's boundaries (as opposed to the point of manufacture or distribution, potentially outside of the boundaries of the City of Toronto) and therefore may be within our jurisdiction to regulate.
The In-store Packaging Waste Diversion Working Group met three times to explore a range of options available to achieve source reduction of the Target Materials. At the last meeting, in January 2008 the industry, brand owner, and retail stakeholders identified the following:
(a) Plastic bags were already the subject of voluntary reduction measures per a target set with the Province of Ontario and therefore no additional programs or measures were necessary in the City of Toronto.
(b) Some hot-drink retailers were piloting in-store recycling programs and suggested that Toronto should integrate hot-drink cups into existing waste diversion programs.

(c) No reduction of plastic take-out food packaging was possible because it may compromise consumer health and safety.
(d) All brand owners pay into municipal Blue Box funding through Stewardship Ontario and therefore already financially support waste diversion initiatives.
Notably, no plan to promote or monitor the waste reduction of the Target Materials was presented, and staff therefore resolved to review the issue of source reduction of the Target Materials and bring a policy forward that will encourage the source reduction of the Target Materials.

Packaging Waste Reduction Forum

Toronto hosted a Packaging Waste Reduction Forum on September 10, 2008 and invited industry, retail and packaging manufacturing stakeholders, peer municipalities and ENGOs to hear presentations and discussion on packaging waste reduction. Speakers and presenters at the event included representatives from the Packaging Association of Canada, EPIC, the Canadian Council of Grocery Distributors, the Guelph Food Technology Centre, the Association of Municipalities of Ontario, the Cities of Seattle, Ottawa, London, Ann Arbor Michigan, among others. Full details and presentations from the forum can be found on the Solid Waste Management website.

Toronto hosted this event to engage stakeholders in a discussion on packaging waste reduction and to hear the various positions and viewpoints on the subject. The forum panels and presenters discussed voluntary vs. regulatory approaches to packaging reduction, the powers and strategies available to municipalities to reduce packaging, and case studies of voluntary reduction programs and examples of financial tools and bans from various jurisdictions.

Individual meetings with stakeholders

Staff met with various stakeholders to discuss options the City was considering and to solicit feedback. The following table below provides a summary of the stated positions and staff response.

Stakeholder Group	Position	Staff Response
Canadian Council of Grocery Distributors and representative from major grocery chains	Opposed to government mandated reduction programs that include bans on packaging. Prefer to promote municipal recycling programs of the Target Materials and would support voluntary individual waste reduction measures by retail members.	Staff believe that sufficient source reduction has not occurred through voluntary-based programs. Staff believes a financial incentive on the consumer is the best way of achieving source reduction and reuse. Staff is willing to work with CCGD to promote and encourage recycling of the Target Materials at the municipal level.
Canadian Foodservice and Restaurant Association	Opposed to municipal banning of take-out foodservice packaging. Prefer to promote municipal recycling programs of hot drink cups and plastic	

take-out food containers.
Indicated that their members are already funding municipal recycling programs through Stewardship Ontario.
Staff believe that banning take-out food packaging that is not compatible with the City of Toronto Blue Bin program is a necessary policy option to implement.
Staff is willing to work with CFRA to promote and encourage recycling of the Target Materials at the municipal level.
Environment and Plastic Industry Council
Opposed to municipal banning and/or taxing of plastic based packaging.
Promotes recycling of all plastic based packaging in municipal Blue Bin programs.
Believes that viable recycling markets exist and that the City chooses not to utilize these markets.
Staff believe that banning Target Materials that are not compatible with the City of Toronto Blue Bin program is a necessary policy option to implement.
While recycling markets may exist, certain plastic packaging is not currently compatible with the City of Toronto Blue Bin program.
Refreshments Canada Opposed to municipal banning of bottled water.
Supports the management of plastic water bottles through municipal Blue Bin programs.
The City is actively promoting municipal tap water as a viable alternative to bottled water. Making tap water more accessible at City facilities while banning the sale of bottled water is consistent with this policy and waste reduction initiatives.

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Tim Hortons Opposed to banning of hot drink cups and lids.
Support the management of this packaging through municipal Blue Bin programs.
Tim Hortons has launched a well designed and well promoted program to encourage recycling of most of their packaging, including paper coffee cups in their private

retail outlets. Tim Hortons piloted this recycling program in 11 Toronto locations starting in April 2008 which includes three-stream waste and recycling bins in stores and at some drive through locations and is planning to make the program available permanently in their private retail outlets city-wide. Recycling and garbage collection services are provided by private waste management companies under contract to Tim Hortons and the City of Toronto does not provide waste management services to any Tim Hortons location.

Tim Hortons recycling program includes polycoat hot drink cups and their promotional posters clearly indicate that cups should go into the paper stream, while the lids must be removed and disposed in the waste.

The company has contracted the recycling collection and processing to Turtle Island Recycling which is further separating the fibre stream (at their MRF) into paper and coffee cups. The cup fibre is processed, marketed and recycled.

Staff assert that the existing paper and plastic hot drink cups are not recyclable in the City of Toronto Blue Bin program.

Staff is willing to work with hot drink retailers to promote and encourage recycling of the hot drink cups at the municipal level.

Staff recognize and commend Tim Hortons for showing environmental leadership by implementing a recycling program at their retail locations.

Starbucks Supportive of 3Rs approach to managing hot drink cups.

Currently working with suppliers to develop a hot drink cup that would be compatible with municipal Blue Bin programs.

Staff are supportive of Starbucks' 3Rs approach to managing hot drink cups.

Staff are willing to work with Starbucks to input and advice into the design of a hot drink cup that is compatible with the City of Toronto Blue Bin program.

Nestle Canada Opposed to municipal banning of bottled water.
Assert that bans will not result in reduction of waste because customers will likely choose other bottled beverages in lieu of bottled water.
The City is actively promoting municipal tap water as a viable alternative to bottled water. Making tap water more accessible at City facilities while banning the sale of bottled water is consistent with this policy and waste reduction initiatives.

Site visits to other municipalities

On the advice of the retail stakeholders and retail representatives, staff organized site visits to the City of Owen Sound (April 25) and the City of Windsor (July 10) to better understand how these jurisdictions are managing hot drink cups in their recycling programs and to compare and contrast these programs with the City of Toronto Blue Bin system.

The City of Owen Sound operates a five stream residential recycling program and allows residents to put polycoat hot drink cups (without the polystyrene lids) in their residential fibre recycling. The City collects recycling from 7 Tim Hortons locations in carts supplied by the City of Owen Sound. Tim Hortons, the only coffee chain operating in Owen Sound, operates a four stream waste program in all of their retail stores and drive through (i.e., paper, plastic and container recycling and garbage). Owen Sound receives polystyrene at resident and business drop off locations only and does not process polystyrene (including hot drink cup lids) in the recycling streams. Polystyrene from Tim Hortons locations is self-hauled to a City contracted depot. Owen Sound does not offer public space recycling collection as part of litter management.

Appendix B
Hot Drink Cups

"Hot Drink Cup":
(A) a disposable, single-use container designed to convey hot beverages, such as coffee, tea, hot chocolate and other hot beverages; typically composed of paper and/or plastic material; and
(B) the plastic, fitted lid for the cup typically composed of polystyrene, or other plastic; and
(C) any associated sleeve designed to fit around the body of the Hot Drink Cup for the purpose of insulating, typically composed of paper fibre.
"Reusable or Refillable Cup" means a cup or mug that is specifically designed and manufactured for multiple reuses as vessel for hot drinks and that is (A) made of ceramic or other earthenware; (B) made of stainless steel; or (C) made of other durable material suitable for reuse.
A Hot Drink Cup is not compatible with the City of Toronto recycling program if it is made of at least two different material types, such as a plastic polystyrene lid and paper fibre body, or contains material that the City of Toronto does not accept in the Blue Bin recycling program.

Appendix C

Details From Social Marketing Campaigns

Count Me In! Climate Change Social Marketing Campaign

The *Count Me In!* program not only raised awareness but encouraged individual action on limiting the potential impacts of climate change through energy efficiency. *Count Me In*! was an innovative training program at the time it was developed for several reasons:

- It was focused on employee based training;
- It had the full endorsement of the employer;
- It was a highly interactive 2 hour workshop on climate change and the importance of energy efficiency;
- It did not focus on awareness building alone, but included personal action;
- It introduced a National Voluntary Pledge program to encourage individuals to make commitments to undertake individual actions to reduce personal GHG emissions in their home and while travelling; and
- It included a monitoring system (designed by the ABC program and used by the *Count Me In!* program) which measures the GHG savings that are committed by workshop participants, and follows up to determine what is saved through their completed actions[31].

The Count Me In! workshop was delivered to 749 participants at 42 workshops at 31 work locations across Canada shown in Table 8. The workshop locations included:

- 13 government offices
- 4 non-government offices and institutions, and
- 14 private sector companies.

Table 20 : Locations Where Count Me In! Social Marketing Campaign on Climate Change Was Delivered

Companies	Government
▪ 3M Canada	▪ City of Burlington
▪ AT&T Canada	▪ City of London
▪ Automotive Parts & Manufacturing Association	▪ Regional Municipality of Halifax
▪ Caledon Countryside Alliance	▪ Town of Markham
▪ Canadian Tire Corporation Ltd.	▪ NRCan (OEE)
▪ Corporations Supporting Recycling (CSR)	▪ City of Toronto Waste Watchers
▪ Dofasco	▪ Ontario MOE Drive Clean Office
▪ Dupont Canada Inc.	▪ Nova Scotia (DOE)
▪ Kodak Canada Inc.	▪ Nova Scotia (DNR)
▪ General Electric (CFB Halifax)	▪ City of Ottawa
▪ Interface Inc.	▪ Ottawa-Carleton (RM)
▪ IBM Canada	▪ City of Toronto
▪ Molson Canada	▪ New Brunswick (DNR)
▪ Mount Saint Vincent University	
▪ Nortel Networks	
▪ Ontario Womens Health Network	

[31] The follow-up program and the personal signing of a pledge form are social marketing techniques which are very important elements in encouraging ongoing change in behaviour and increasing awareness

▪ Slater Steel	
▪ RWDI	

Among the 749 workshop participants, 83% registered formal pledges to reduce greenhouse gas emissions. Those not completing the pledge forms, for the most part, were participants that had to leave early from the workshop. A handful of participants felt uneasy about the pledge and declined to participate.

The awareness of participants on climate change was measured at 80% before the *Count Me In!* workshop, and 89% after the workshop, using a standard test. This shows that the workshop increased awareness of climate change.

Count Me In! workshop participants rated the statement *I believe that limiting climate change by conserving energy is the right thing to do* as 5.4 out of a possible score of 6, registering a very high level of support of this statement.

Workshop participants pledged to reduce a total of 1,178 tonnes of greenhouse gases through actions in their homes and on the road, which averages 1.9 tonnes per participant. The ten most commonly pledged actions in order of highest to lowest commitment, as well as the actual actions which were carried out after the workshops (self reported by participants) are presented in Table 9.

Table 21: Comparison of Top Ten Pledged Actions and Actions Taken Following Count Me In! Social Marketing Program

Action	Top Ten Workshop Commitments (my number of participants who pledged and rank of pledges)	Top Ten Self Reported Actions After Workshop	Additional Self Reported Actions After Taking Workshop
Keep Tires Fully Inflated	50% (#1)	#3	
Turn Lights off when not in use	39% (#2)	#2	
Recycle more	38% (#3)	#5	
Reduce speed	34% (#4)	#4	
Reduce idling	33% (#5)	#6	
Turn off computer at night	29% (#6)	#8	
Fix leaky faucet	27% (#7)	#7	
Caulk and weatherstrip doors and windows	26% (#8)	Not in top 10	
Avoid non-recyclable packaging	25% (#9)	#10	
Switch to compact fluorescents	25% (#10)	Not in top 10	
Install low flow equipment	Not listed	#1	
Run dishwasher when full	Not listed	#9	
Talking to friends/family more about climate change and energy efficiency			76%

Talk to colleagues about climate change and energy efficiency			67%
Install the a faucet aerator			65%
Take public transit			51%
Conduct further research on climate change			37%
Conduct or arrange for a home energy audit			5%